

MARCH, 1961
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Problems of Economics

Selected Articles from Soviet Economics Journals in English Translation

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V. Moskalenko: The Seven-Year Plan and Manpower (Ekonomicheskaya Gazeta, February 7, 1961)

P. Krylov: Some Questions Concerning the Methodology of Long-Range Planning to Raise the Living Standards of the People (Planovoe Khoziaistvo, No. 8, 1960)

A. Emel'ianov and V. Krasovskii: Methods of Determining the Economic Effectiveness of Mechanization and Automation (Planovoe Khoziaistvo, No. 6, 1960)

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D. Allakhverdian: The Functions of the Financial System Under Socialism (Voprosy Ekonomiki, No. 9, 1960)

I. Osadchaia: Joan Robinson's The Accumulation of Capital (Mirovaia Ekonomika i Mezhdunarodnye Otnosheniia, No. 3, 1960)

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PROBLEMS OF ECONOMICS

Selected Articles from Soviet Economics

Journals in English Translation

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JOURNAL OF LENINGRAD UNIVERSITY, ECONOMIC SERIES
VESTNIK MOSKOVSKOGO UNIVERSITETA, SERIIA EKONOMIKI –
JOURNAL OF MOSCOW UNIVERSITY, ECONOMIC SERIES
VESTNIK STATISTIKI – JOURNAL OF STATISTICS
VNESHNIAIA TORGOVLIA – FOREIGN TRADE
VOPROSY EKONOMIKI – PROBLEMS OF ECONOMICS
MIROVAIA EKONOMIKA I MEZHDUNARODNYE OTNOSHENIIA –
WORLD ECONOMY AND INTERNATIONAL RELATIONS
NAUCHNYE DOKLADY VYSSHEI SHKOLY – EKONOMICHESKIE
NAUKI – SCIENTIFIC PAPERS OF HIGHER EDUCATIONAL
INSTITUTIONS, ECONOMIC SCIENCES
PLANOVOE KHOZIAISTVO – PLANNED ECONOMY
EKONOMICHESKAIA GAZETA – ECONOMIC GAZETTE
SOTSIALISTICHESKII TRUD – SOCIALIST LABOR

Articles from other publications are included from time to time if they are considered of sufficient interest for translation.

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POPULATION AND LABOR FORCE

Voprosy Ekonomiki, No. 1, 1961

CENTRAL STATISTICAL ADMINISTRATION UNDER THE COUNCIL OF MINISTERS:

Distribution of USSR Population by Social Groups, Branches of Economy and Occupations, and Educational Level of Personnel Manual and Mental Labor

Supplementing the already published data of the 1959 census taken on January 15, 1959, census data are given below on the distribution of the population by social groups, sources of income, branches of the economy and main occupations as well as the educational level of manual and mental workers.

I. Distribution of Population by Social Groups and Sources of Income

1. The distribution of the population by social groups in 1959 is shown by the following data:

	No. of persons (employed and dependents) in millions	% of total
Total population including:	208.8	100.0
Workers and employees in cities and villages	142.7	68.3
Collective farmers	65.5	31.4
Individual peasants and handicraftsmen not be- longing to cooperatives	0.6	0.3

Classifying the population by social groups, dependents are included in those social groups to which their supporters belong; pensioners and dependents — in those social groups to which they belonged prior to their becoming pensioners or dependents. Members of producers' cooperatives are included among workers and employees.

The distribution of the population by social

groups in the interval between the latest censuses changed as shown in the table on the top of the following page (in percentage of total).

There are no exploiting classes in the Soviet Union, and the socialist society of our country consists of two friendly classes: the working class and the collective farm peasantry. A considerable section of the population consists of intellectuals — brain workers — who constitute one fifth

	1939	1959
Total population	100.0	100.0
including:		
Workers and employees	52.5	68.3
Collective farmers	44.9	31.4
Individual peasants and handicraftsmen not belonging to cooperatives	2.6	0.3

of the gainfully employed part of the population.

3. The distribution of the USSR population by

sources of income is shown by the following figures:

	in thousands	% of total
Total population	208,827	100.0
A. Gainfully employed persons (except members of families of collective farmers, workers and employees engaged in personal auxiliary farming)	99,130	47.5
including:		
workers and employees of state, cooperative and public establishments and organizations, as well as persons hired by organized groups of citizens, carpenters, stove makers and other workers employed in private building and repair work:		
a) registered at time of census	62,961	30.2
b) annual average number	58,900	—
collective farmers employed on the commonly-owned farm:		
a) registered at time of census	32,280	15.5
b) annual average number	24,500	—
individual peasants and handicraftsmen not belonging to cooperatives	266	0.1
servicemen	3,623	1.7
B. Members of families of collective farmers, workers and employees in personal auxiliary farming	9,865	4.7
C. Dependents of individuals (children, the aged, and able-bodied persons engaged exclusively in housework and the upbringing of children)	85,422	40.9
D. Pensioners (with pensions as their chief means of subsistence)	12,423*	6.0
E. Persons receiving stipends	1,718	0.8
F. Persons with other sources of income and persons who did not name their source of income	269	0.1

* The total number of pensioners at the beginning of 1959 was some 20 million. During the census only those were registered as pensioners for whom the pension was the main source of livelihood. Permanently employed pensioners were classed among the gainfully employed; many pensioners living with families whose aggregate wages exceeded the pension referred to these wages as their means of subsistence.

ing the census both those employed throughout the year and those working on seasonal and temporary jobs, as well as pensioners working throughout the year were registered as gainfully employed persons. Some members of collective farm-families, while working on the collective farm, devote much of their time to housework and personal auxiliary farming. For this reason the total number of workers, employees and collective farm-registered during the census exceeds the average number.

The total number of gainfully employed persons including those engaged exclusively in housework and personal auxiliary farming) registered during

the census was 99.1 million, or 47.5% of the population, as against 46.2% in the 1939 census. The percentage of gainfully employed men was 54.7% in 1939 and 54.8% in 1959, and of women — 38.4% and 41.4% respectively.

II. Distribution of Population by Branches of the Economy

4. The distribution of the gainfully employed population by branches of the economy was as follows:

	Both sexes (thousand)	% of total number employed	% of total number in group	
			men	women
Total population	208,827	—	45	55
Gainfully employed persons (except members of families of collective farmers, workers and employees engaged in personal auxiliary farming)	99,130	100.0	52	48
including:				
Employed in material production	80,862	81.6	53	47
among them:				
industry, construction, transport and communications	36,575	36.9	61	39
agriculture*	38,426	38.8	46	54
including:				
collective farmers (except those employed outside agriculture)	31,723	32.0	43	57
workers and employees of state farms and other agricultural establishments and organizations	6,611	6.7	59	41
individual peasants	92	0.1	35	65
in trade, public catering, procurement, material-technical supply and marketing	5,171	5.2	39	61
Employed in non-production branches (education, science, health, house management, communal services, administration, financial and credit system)	14,453	14.6	36	64
among them:				
education, science and health	9,793	9.9	29	71
Servicemen	3,623	3.6	100	0
Persons failing to name their place of employment or answer not clear	192	0.2	70	30

* In terms of average annual employment, 26.8 million persons are employed at collective farms, state farms and other agricultural establishments and organizations; if those employed in individual auxiliary farming are included, their number is 33 million.

5. Distribution of the gainfully employed population by branches of the economy had changed in

1959 as compared with 1939 as follows (in percentage of total):

	1939	1959
All gainfully employed persons (with the exception of members of families of collective farmers, workers and employees engaged in individual auxiliary farming)	100.0	100.0
including:		
Those employed in material production among them:	85.6	81.6
in industry, construction, transport and communications	30.1	36.9
in agriculture	50.1	38.8
among them:		
collective farmers	43.5	32.0
workers and employees	4.6	6.7
individual farmers	2.0	0.1
in trade, public catering, procurement, material and technical supply and marketing	4.9	5.2
Those employed in non-production branches	10.1	14.6
among them:		
education, science and health	5.9	9.9

The proportion of persons employed in industry, construction, transport and communications increased from 30.1% in 1939 to 36.9% in 1959.

The progress of mechanization and higher labor productivity have resulted in employment in agriculture dropping from 50.1% in 1939 to 38.8% in 1959. In terms of average annual employment the number of persons employed in agriculture decreased to 32%.

There was a substantial increase in employment in education, science, health and the municipal services. At the same time, thanks to the measures taken by the Party and government to simplify and reduce the administrative apparatus, the proportion of persons employed in government administrative organizations has declined.

Women in the USSR are active participants in the building of the communist society. While in prerevolutionary Russia, according to census data, only 19% of those gainfully employed were women, at present women constitute 48% of the gainfully employed and 54% among mental workers.

In prerevolutionary Russia 80% of the employed women worked as house servants and farm laborers, and only 13% worked in industry, particularly

in textiles and clothing, and also as unskilled building workers, with a mere 4% in education and health. At present, women are successfully working in every branch of the economy, science and culture. According to the 1959 census there are now 287,000 women doctors in the USSR, upwards of 120,000 women scientists, 26,000 women literary workers, and 268,000 women engineers. Women constitute 73% of the teachers in the elementary, seven-year and all secondary educational institutions and courses, 76% of the doctors, and 32% of the engineers.

III. Distribution of Population by Occupations

6. The number of persons employed in physical and mental occupations, and their proportion of the total employed population (servicemen are shown according to their pre-military employment) are shown in the table on the top of the following page.

	Both sexes	Men	Women
<u>Absolute figures (in thousands)</u>			
Total number of employed persons including:	99,130	51,525	47,605
persons employed primarily in physical work	78,635	42,085	36,550
persons employed in mental work	20,495	9,440	11,055
<u>In percentage of total</u>			
Total employment including:	100.0	100.0	100.0
persons employed primarily in physical work	79.3	81.7	76.8
persons employed in mental work	20.7	18.3	23.2

Between the 1939 and 1959 censuses the population increased by 22%, while the number of

persons in various occupations changed as follows:*

	Number (in thousands)		1959 in % of 1939
	1939	1959	
Total USSR population (within the boundaries of the given year)	170,557	208,827	122
<u>Persons employed primarily in physical work</u>			
<u>In power plants and on hoisting and transport mechanisms</u>	585.5	1,721.0	294
<u>In mining</u>	589.0	1,187.1	202
including:			
drillers and tunnelers	61.6	375.9	610
cutting machine and cutter-loader operators	9.2	29.1	318
cutters and hewers	178.3	153.2	86
<u>In metallurgy and metalworking</u>	4,358.5	9,304.0	213
including:			
furnacemen, steel smelters, cupola attendants, smelters and electrolyzers	23.3	60.8	260
metal pourers, molders and core makers	99.9	190.0	190
rolling mill mechanics and operators and other rolling workers	28.8	65.3	227
lathe operators	433.6	928.2	214
milling machine operators	65.2	194.7	298
other machine operators	240.7	428.2	178
electrical and gas welders	109.9	445.6	405
fitters, tool and gauge makers	1,433.5	3,440.9	240

* In the census the position held or actual job performed was registered rather than the specialty received at school.

	Number (in thousands)		1959 in % of 1939
	1939	1959	
pressers and punchers	55.2	131.2	238
mechanics (workers), setters and adjusters of equipment	246.8	593.8	241
repairmen (including electrical repairmen)	438.0	1,289.7	294
Chemical trades	209.5	394.9	188
Mineral processing	240.0	538.5	224
Lumbering	808.6	751.0	93
Woodworking	989.9	1,406.8	142
including:			
lathe operators, planers and other machine operators	90.7	189.5	209
frame makers	20.1	150.8	751
pattern makers	20.3	38.1	187
joiners	488.7	778.4	159
Paper manufacturing	22.1	36.5	166
Printing	163.1	212.0	130
Textiles	1,059.8	1,130.1	107
including:			
spinners	115.5	127.9	111
winders, twistors, warpers, dressers	132.4	135.2	102
weavers	213.7	251.9	118
knitters	90.2	86.5	96
Needle trades	728.3	1,302.3	179
including:			
cutters, markers	19.3	76.1	394
sewing machine operators	72.3	249.8	346
tailors, dressmakers	483.8	840.2	174
Leather trades	196.2	145.2	74
Shoemaking	510.9	372.2	73
including:			
cutters, stitchers and operators	51.0	67.2	132
shoemakers, bootmakers	379.3	185.1	49
Food trades	692.8	815.4	118
Building trades	2,478.7	5,094.2	206
including:			
excavator operators	9.0	124.0	14 times
building and road machine operators and drivers	1.7	116.5	70 times
ditch diggers	321.8	180.3	56
bricklayers	176.1	723.5	411
facers	5.3	18.4	344
carpenters	1,273.5	2,092.0	164
plasterers	147.4	518.9	352
painters	176.2	430.0	244
stovesetters	126.6	123.6	98
Agriculture	34,763.7	33,893.1	97
including:			
livestock farm managers and team leaders	306.2	217.6	71

	Number (in thousands)		1959 in % of 1939
	1939	1959	
leaders of tractor, field cropping, integrated and other farming teams	756.5	522.0	69
link leaders	466.5	156.5	34
tractor drivers	857.5	2,036.0	237
combine operators	131.2	353.3	269
operators of farm machines and implements	102.1	187.0	183
herdsmen, calfmen, milkmen, stablemen, pig tenders, poultrymen	3,115.6	4,133.5	133
shepherds, range men	583.3	753.6	129
gardeners, grapegrowers, vegetable growers, melon growers	184.1	191.2	104
unspecified farm trades	27,313.8	24,213.8	89
Forest protection and afforestation	114.5	230.7	202
Fishing and fish culture	185.4	127.6	69
Railroad transport	939.0	1,664.1	177
including:			
steam, oil and diesel locomotive engineers and trolley drivers	164.5	314.6	191
electric locomotive engineers	8.1	78.4	974
steam locomotive firemen	42.0	60.3	144
train conductors	54.2	103.5	191
car inspectors, greasers, train car foremen	68.5	103.8	151
shunters, couplers, brake shoemen	49.2	87.1	177
linesmen	243.4	374.9	154
trackwalkers and watchmen	105.9	142.9	135
guards	60.0	110.3	184
switchmen	122.4	209.2	171
Water transport	160.3	244.3	152
including:			
machinists, ship engineers	29.3	47.2	161
skippers	24.1	33.2	138
seamen	60.0	115.9	193
Automobile and electric city transport	800.9	3,395.1	424
including:			
automobile drivers	725.0	3,174.2	438
street car, subway and trolleybus drivers	19.9	37.4	187
bus, street car and trolleybus conductors	38.4	120.9	315
Other transport trades	2,714.8	2,721.9	100
including:			
teamsters, cabmen	1,118.3	784.3	70
wheelers, porters	367.9	216.1	59
dockers, loaders	1,079.4	1,632.3	151
Postmen and mail carriers	181.2	242.9	134
Public catering	577.8	783.6	136
including:			
cooks	354.4	522.5	147
waiters	185.3	183.8	99

	Number (in thousands)		1959 in % of 1939
	1939	1959	
Municipal and related services	4,556.2	5,024.9	110
including:			
watchmen and doormen	2,125.8	2,030.3	96
scrubwomen and canteen workers	1,514.8	1,732.9	114
firemen	172.0	136.9	80
janitors	115.2	201.6	175
stokers	72.7	124.4	171
laundry workers	157.8	193.3	122
Hospital attendants, nurses	428.7	894.9	209
Warehousemen, weighers, goods examiners and distributors	722.5	904.7	125
Laborers	1,047.0	2,462.1	235
<u>Persons Engaged in Mental Work</u>			
Heads of government bodies, public organiza- tions and their subdivisions	445.2	392.1	88
Directors of enterprises (industrial, building, agricultural, forestry, transport, communi- cations) and their subdivisions	757.0	955.2	126
among them, chairman and deputy chairmen of collective farms	278.8	102.8	37
Engineering-technical personnel	1,656.5	4,205.9	254
including:			
engineers*	247.3	834.3	337
designers and draftsmen	103.9	297.1	286
foremen	267.8	753.5	281
technicians	274.0	513.2	187
laboratory, assistants	156.5	436.2	279
Agronomists, zootechnicians, veterinary workers and foresters	294.9	477.2	162
including:			
agronomists and zootechnicians	176.8	278.5	158
veterinary doctors	20.0	44.9	224
veterinary technicians and assistant sur- geons	79.6	109.8	138
foresters	18.5	44.0	239
Medical workers	679.6	1,702.5	251
including:			
chief doctors and other heads of health in- stitutions	16.5	44.0	266
doctors	122.3	337.9	276
dentists	14.0	31.7	227
doctors' assistants, midwives and nurses	332.4	1,058.2	318
Teachers, tutors and scientific personnel	1,553.1	2,835.6	183
including:			
college teachers and research personnel	111.6	316.4	284
heads of schools (except elementary schools)	73.1	114.9	157

* Excluding those engineers who were included among the directors of enterprises and their subdivisions.

	Number (in thousands)		1959 in % of 1939
	1939	1959	
teachers in elementary and secondary schools and courses (including elementary school principals)	1,206.4	2,022.8	168
teachers and instructors of physical culture and sports	28.2	106.6	378
Literary and press workers	58.0	104.1	179
Cultural workers	285.0	462.3	162
among them, library heads and librarians	87.2	239.0	274
Art workers	143.3	190.6	133
Legal personnel	62.4	78.7	126
among them, judges and prosecutors	20.2	23.0	114
Communications workers	265.4	476.4	180
among them:			
radiotelegraphers	15.9	60.5	381
telegraphers	54.2	71.2	131
telephone operators	105.3	175.3	166
Workers in trade, public catering, procurements, supply and marketing	1,626.1	2,268.2	139
including:			
store managers and heads of trading organizations	244.9	334.8	137
salesmen, store section heads and managers of stalls, counters and snackbars	715.0	1,166.3	163
Planning, accounting and auditing workers	3,102.0	3,501.9	113
including:			
economists, planners, statisticians	282.1	308.3	109
bookkeepers, accountants	1,785.4	1,816.9	102
cashiers	279.3	413.5	148
inspectors, controllers, auditors and other control and accounting workers	755.2	963.2	128
Clerks	489.4	535.9	110
Workers in municipal establishments and services	202.5	277.1	137
Agents and dispatchers	176.4	146.0	83

th the increase in the number of skilled work-
the mechanization of production processes in
y branch of the economy has made it possible
onsiderably reduce the number of workers in
e trades involving unmechanized hand labor.
The above data show the tremendous shifts
have taken place in employment in the various
s during the last 20 years. Even more striking
he figures indicating the increase in skilled
ers during the 32 years since the census held
e end of 1926, when the restoration of the econ-
to the prerevolutionary level was nearing com-
on.
e number of skilled workers in various trades

has grown as indicated in the table shown on the
top of page 12.

The growth in the number of specialists between
1926 and 1959 is indicated in the table shown
in the middle of page 12.

9. The increase in the number of skilled work-
ers and intellectuals is one of the decisive factors
in the successful development of the economy and
culture of the national republics. Thus, in Central
Asia and Kazakhstan between 1926 and 1959 the
number of workers and employees increased 10
times compared to a sixfold increase in the USSR
as a whole.

Even more significant was the increase in the

	Number (in thousands)		Increase between 1926 and 1959
	1926	1959	
Metalworkers	993	9,304	9 times
including:			
lathe operators, milling machine opera-			
tors and other machine tool operators	86	1,551	18 "
pressers and punchers	9	131	15 "
tool and guage makers	11	239	22 "
fitters	331	3,202	10 "
mechanics	26	594	23 "
metallurgical and foundry workers	51	461	9 "
repairmen and electricians	68	1,290	19 "
Chemical workers	44	395	9 "
Machinists	121	1,781	15 "
Truck and tractor drivers and combine			
operators	22	5,684	260 "
including:			
truck drivers	18	3,174	176 "
tractor drivers and combine operators			
(including tractor team leaders)	4.2	2,510	598 "

	Number (in thousands)		Increase between 1926 and 1959
	1926	1959	
Directors of enterprises, building pro-			
jects, state and collective farms, admin-			
istrative institutions and their subdivisions	365	2,223	6 times
Engineers, technicians and agronomists	267	4,683	18 "
Teachers and other educational workers	486	3,276	7 "
Doctors and medical assistants	199	1,702	8.5 "
Scientific workers	14	316	23 "

number of skilled workers and specialists in Central Asia and Kazakhstan. The number of metalworkers — one of the most skilled groups of occupations of the working class — showed a ninefold increase in the country as a whole and an eighteenfold increase in Central Asia and Kazakhstan. The increase in the number of chemical workers was also 9 times in the USSR as a whole and 72 times in Central Asia and Kazakhstan. For machinists the figures were 15 and 39 respectively. The number of truck and tractor drivers and combine operators in the country as a whole went up 260 times,

and in Central Asia and Kazakhstan — 628 times. The number of engineers, technicians and agronomists in the USSR as a whole increased 18 times, in Central Asia and Kazakhstan — 38 times. For teachers and other educational workers the total increase was 7 times, in Central Asia and Kazakhstan — 19 times; the figures for medical workers were 8.5 and 21 respectively. The number of scientific workers in the Soviet Union as a whole jumped from 14,000 to 316,000, or 23 times; in Central Asia and Kazakhstan there were altogether 364 scientific workers in 1926, but in 1959 they numbered

0, an increase of 74 times.
 comparison between the census data of 1959
 1926 shows, first, that since the socialist re-
 construction of the country's economy began, an
 y of skilled labor has been created and that the
 per of workers in the most important trades
 increased many times. Second, these data in-
 e a tremendous growth in the number of engi-
 s, agronomists, technicians, scientific work-
 teachers and other educational workers,
 cal workers, directors of enterprises, build-
 projects, state and collective farms. This in-
 se in the number of skilled workers and intel-
 als has occurred in all the Union republics.
 n the Great October Socialist Revolution took
 e the bourgeoisie all over the globe continued
 peat that the power of the Soviets was doomed
 use Russia was a backward country and its

working class had no specialists capable of gov-
 erning the country and running the economy. Life
 has confirmed the truth of Lenin's assertion that
 the Revolution would awaken the people's initiative,
 that Soviet power would bring to the fore leaders
 and organizers from among the masses, that the
 ordinary worker and peasant, after assuming pow-
 er, would learn to administer the affairs of state
 and master the achievements of modern science
 and technology.

IV. The Educational Level of Workers in Physical and Mental Labor

10. The educational level of the workers en-
 gaged in physical and mental labor in 1959 was
 characterized by the following figures:

	Number per 1000 of population with:		
	Secondary or higher education	including	
		Higher, in- complete higher or specialized secondary education	Complete sec- ondary or seven-year school educa- tion
Total population	281	64	217
Gainfully employed persons	433	109	324
including:			
persons engaged primarily in physical labor	316	14	302
persons engaged in mental labor	884	476	408

between 1939 and 1959 the educational level
 workers, employees and collective farmers

changed as shown in the following table:

	Number having secondary or higher education per 1000 persons	
	1939	1959
Total population	83	281
Gainfully employed persons	123	433
including:		
persons engaged primarily in physical labor	43	316
among them:		
workers	82	386
collective farmers (exclusive of managers and specialists)	15	212
persons engaged in mental labor	498	884

II. The educational level of persons in

various occupations changed as follows:

	Number having secondary or higher education per 1000 persons	
	1939	1959
Persons engaged primarily in physical work	43	316
In power plants and on hoisting and hauling mechanisms	60	383
In mining	55	407
In metallurgy and metalworking including:	176	535
furnacemen, steel smelters, cupola attendants, smelters and electrolyzers	102	458
metal pourers, molders, and core makers	114	460
rolling mill mechanics, operators and other rolling workers	108	459
lathe operators	320	667
milling machine operators	272	683
other machine operators	95	533
electric and gas welders	163	453
fitters, tool and gauge makers	199	525
pressers and punchers	67	487
mechanics (workers), setters and adjusters of equipment	285	628
assemblers, electricians, line inspectors	292	633
Chemical trades	113	514
Mineral processing	56	403
Lumbering	31	248
Woodworking including:	58	374
lathe operators, planers and other machine operators	66	412
frame makers	38	278
patternmakers	355	690
joiners	71	386
Paper manufacturing	99	414
Printing	190	640
Textiles including:	60	478
spinners	84	555
winders, twistors, warpers, dressers	37	465
weavers	78	533
knitters	82	530
Needle trades including:	69	565
cutters, markers	105	585
sewing machine operators	92	585
tailors, dressmakers	64	568
Leather trades	40	318
Shoemaking including:	44	397
cutters, stitchers and operators	101	549
shoemakers, bootmakers	23	278

	Number having secondary or higher education per 1000 persons	
	1939	1959
Food trades	43	393
Building trades	30	318
including:		
excavator operators	128	494
building and road machine operators	100	408
ditch diggers	62	331
bricklayers	29	348
carpenters	14	238
plasterers	36	397
painters	59	411
stovesetters	24	219
Agriculture	13	220
including:		
section managers and livestock team leaders	12	333
leaders of tractor, field cropping, composite and other farming teams	16	336
link leaders	23	301
tractor drivers	21	336
harvester combine operators	35	391
operators of farm machines and implements	18	396
herdsmen, calfmn, milkmen, stablemen, pig tenders, poultrymen	5	204
shepherds, range hands	4	146
gardeners, grapegrowers, vegetable growers, melon growers	25	248
Forest protection and afforestation	16	229
Fishing and fish culture	11	167
Railroading	71	408
including:		
steam, oil and diesel locomotive engineers and trolley drivers	211	602
electric locomotive engineers	324	627
steam locomotive firemen	71	522
train conductors	42	403
car inspectors, greasers, train car foremen	94	410
shunters, couplers, brake shoemen	47	315
linesmen	23	300
trackwalkers and watchmen	8	145
guides	61	521
switchmen	31	384
Water transport trades	107	466
including:		
machinists, ship motormen	233	621
seamen	89	488
Automobile and electric city transport	136	437
including:		
automobile drivers	141	427
street car, subway and trolleybus drivers	133	691
bus, street car and trolleybus conductors	76	626

	Number having secondary or higher education per 1000 persons	
	1939	1959
Other transport trades	21	241
including:		
teamsters, cabmen	13	147
dockers, loaders	27	269
Postmen and mail carriers	63	453
Public catering	40	408
including:		
cooks	37	378
waiters	49	534
Municipal and related services	14	135
Hospital attendants, nurses	26	270
Warehousemen, weighers, examiners and distributors of goods	93	562
Laborers	26	333
<u>Persons engaged in mental work</u>	498	884
Heads of government and public organizations and their subdivisions	359	908
Directors of enterprises and their subdivisions including:	285	853
chairmen of collective farms and their deputies	23	704
Engineers and technicians	630	910
Agronomists, zootechnicians, veterinary surgeons and foresters	622	936
Medical workers	674	969
Teachers, tutors and scientific workers	892	991
Cultural workers	594	958
Art workers	644	894
Legal personnel	684	987
Communications workers	368	792
Trade, public catering, procurement, supply and marketing workers	182	737
Planning, accounting and auditing workers including:	515	900
economists, planners, statisticians	780	979
bookkeepers, accountants	535	927
Clerks	624	943
Municipal and related services	197	561

In 1926, when the Soviet people were completing the restoration of the economy to the prerevolutionary level, the USSR had 168,000 students in higher educational institutions, 181,000 students in secondary technical schools, and only a little over 2.5 million brain workers; in 1959 the respective figures were 2.2 million, 1,868,000, and more than 20 million. Between 1926 and 1959 the population increased 42%, the number of college students 13

times, the number of secondary technical school students more than 10 times, and brain workers eight times.

Among those employed in physical work the number of persons with college and secondary school education also increased very substantially. Before the Revolution there were no workers and peasants in Russia with a secondary school or college education, and in 1926 less than 1 1/2%

manual workers had a secondary school education. By 1939 this figure had risen to 4.3%, and in 1959 32% of those engaged in physical work had a secondary school or even a college education, making them 39% of the workers and 21% of the collective farmers doing manual work. The educational standards of collective farm machine operators and other skilled workers are practically as high as those of industrial workers. These figures show that under Soviet power an army of more than 20 million intellectuals has

been created; this is a truly popular intelligentsia, flesh of the flesh and bone of the bone of the workers and peasants. More remarkable still is the fact that almost one third of those engaged in manual work, including two fifths of the workers and more than one fifth of the peasants, have a secondary or even a college education.

All this convincingly proves that very tangible progress has already been made toward the gradual abolition of substantial differences between manual and brain work.

Ekonomicheskaya Gazeta, February 7, 1961

MOSKALENKO:

The Seven-Year Plan and Manpower

Socialism creates optimum conditions for the most rational use of manpower, society's prime productive resource. For the first time in history it has become possible to distribute the labor force in a planned manner among the different spheres of production, branches of economy and economic regions of the country.

Under the Seven-Year Plan the number of workers and employees is to increase by almost 12 million and reach 66,500,000 by 1965. However, we already have reason to believe that the actual increase will be much larger, mainly because overfulfillment of the seven-year targets for the commissioning of new industrial capacities, cultural establishments and general amenities as well as for projects, requires more workers and employees than called for in the target figures. According to this year's plan the increase will be 10,000,000 — approximately twice the planned average increase.

Liberal bourgeois newspapers and magazines have been claiming quite often that the Soviet Union is allegedly experiencing difficulties because of a shortage of manpower to implement its plans for economic and cultural development. The "arguments" they invoke are: the combination of education with socially useful labor, the reduction in Soviet armed forces, and the intensified drive against economic and social parasites.

Everybody knows that the Soviet people, who bore the brunt of the past war, sustained terrific losses

in human life, particularly among that part of the population which was in the age group between 16 and 40 in 1941. Practically all of them would now be working if not for the war. Furthermore, in the past two years, because of low birth rates during the war, fewer persons are coming of working age. Naturally, all these factors cannot help but affect our pool of manpower.

However, the advantages of the socialist system not only make it possible to reduce to a minimum the serious consequences of the war's aftermath on economic development, but even to offset them entirely. One such advantage is our objective possibility of coordinating economic requirements for manpower with an increase in labor resources and also with the possibility of increasing the number of persons employed in social production. This is something the wishful thinkers forget in trying to present the invented "Soviet manpower problem" as supposedly the Achilles' heel of our Seven-Year Plan and, thus, to question its feasibility.

The main source upon which we can draw in the USSR to swell our pool of manpower is the natural growth of the able-bodied population. As the 1959 census has shown, after the war, this group — which includes men between the ages of 16 and 59, and women between the ages of 16 and 54 — increased rather than diminished; it went from 102 million in 1939 to 119,800,000 in 1959, a rise of 17.4%.

In the next few years, despite the serious

consequences of the war, the able-bodied population of the USSR will grow considerably. Thanks to rising material standards, the state's concern for mothers and children, and further improvements in health services, the birth rate climbed steeply after the war. In 1959 we had more than 17 million children between 10 and 15 years of age. During the seven-year period they will reach working age, which will swell the national pool of manpower appreciably — even if we take into account the natural decrease in the population and the retirement on pensions of part of the older age groups.

Under socialism work is both an obligation and a point of honor for every able-bodied citizen. Social ownership of the means of production plus the complete abolition of exploiting classes has made the universal right to work a reality for the first time in history.

However, we have not yet created conditions whereby the whole able-bodied population can participate in social production. In the first place, so far neither the commonly owned economy of the collective farms nor the network of cultural and public service institutions, child welfare establishments, shops and dining rooms have been developed adequately enough. If they were, everyone would be able to give up housekeeping and personal auxiliary farming operations. In the second place, work has not yet become the prime urge in everyone's life, since a person must work in return for the values society gives him.

At the same time, a steady increase in the number of persons employed in social production — first of all in the state-owned public sector of the economy — is characteristic even of the present phase of communism. The following table shows this.

Average Annual Number of Soviet Workers,
Employees and Collective Farmers
(in millions)

Year	Total	Including workers and employees
1940	60.2	31.2
1950	66.5	38.9
1957	77.4	53.1
1958	79.5	54.6
1959	81.0	56.5

Hence in 1959 the total number of workers,

employees and collective farmers was 34.5% above the 1940 level, while the number of workers and employees increased by 81%.

According to the census, on January 15, 1959 there were 99,100,000 persons registered as employed (excluding persons engaged in housekeeping and personal auxiliary farming operations). This was 47.5% of the population, compared to 46.2% in 1939.

Still, a comparison between the number employed in social production and the total able-bodied population — 119,800,000 according to the census — shows that we still have considerable reserves to draw upon. These are mainly people engaged in housekeeping and personal auxiliary farming operations, which in some areas account for roughly a quarter of the entire able-bodied population.

Some economists claim that under socialism part of the able-bodied population must engage in housekeeping and personal auxiliary farming, which they also consider socially useful.

I think that this point, if it is applied to socialism in general, without regard to the concrete historical and economic conditions of the country in question, is wrong. We still have housekeeping and personal auxiliary farming operations at the present stage of communist construction as a matter of necessity. Wars and the subsequent rehabilitation of a ravaged economy robbed the Soviet people of some 20 years, all told. That is why we have not yet been able to build up a network of child welfare establishments, public dining rooms, public services and general amenities, that would enable us to attract the overwhelming majority of women to participate in social production.

In the current seven-year period we are planning to increase the number of boarding school pupils 14 times to a total of 2,500,000. Our kindergartens will be able to accommodate 4,200,000 children instead of 2,300,000. New accommodations at nurseries will be double the number made available in the previous seven-year period. This alone will enable us to recruit at least five to six million men for social production.

The program set for developing the network of public catering establishments will do much to relieve women of household drudgery. Since the number of these establishments is to be more than doubled in the seven-year period, by 1965 most workers, employees and pupils will have meals provided by this network.

Because of all these undertakings, the proportion of workers occupied in the non-productive sector will inevitably grow. We must regard such development in our economy as quite logical and

beneficial, for it reflects the state's concern to satisfy the working people's material and cultural needs as fully as possible. Furthermore, the relative increase in the number of non-productive workers will accelerate the process of attracting able-bodied population to participate in social production.

As the census shows, the proportion of workers in non-productive branches in the Soviet Union rose from 10.1% in 1939 to 14.6% in 1959. This process will continue both during and after the seven-year period.

Apparently, personal auxiliary farming by workers, employees and collective farmers — in which some 10 million people are now engaged — will cease to exist long before housekeeping does. As the commonly-owned economy of the collective farms develops, the "subsidiary husbandries of the collective farmers," as pointed out in the decisions of the Central Committee of the CPSU at its plenary meeting in December 1958, "will gradually lose their importance. It will become more profitable for the collective farmers to receive products from the collective farm than to spend the energy to grow them on their private plots."

Finally, a more rational distribution of the labor force among economic branches and economic areas also represents a major reserve for swelling our pool of manpower. According to the Central Statistical Administration of the USSR, an annual average of 26,200,000 persons are occupied in the agricultural work done by the collective farms, state farms and other enterprises and organizations. At the same time, according to the census the number of collective farmers registered as occupied on the commonly-owned land is about 1,300,000. This once again confirms Comrade N. S. Khrushchev's evaluation of the use of manpower on the collective farms. "On our collective farms," he said, "we have no shortage of manpower. On the contrary, as a rule we have a surplus of it... too many people are occupied in agricultural work, and the labor force will be used unproductively."

One must bear in mind the fact that the economy's increasing demand for manpower sometimes clashes with the limited opportunities for part of the population to obtain a job in their profession where they live. For the same reason many establishments sometimes artificially impede reductions in personnel. Naturally, this retards labor productivity. This applies first of all to several "old" Central and Western areas, where the construction of new industrial capacities is not widespread.

On the other hand, the demand for skilled manpower and specialists in the Eastern areas will steadily increase. In the next few years it is expected that about one million young men and women will go East as Komsomol volunteers. At the same time, we must improve the forms and methods of planned redistribution of manpower among the branches of the economy and the country's economic areas.

Currently the bulk of the workers drawn to other areas comes through the so-called system of organized recruitment, which means that they are recruited for a specified term but without any job specified in the contract which they sign. This system, which was introduced in the early thirties, was a positive factor in its day, but it is plainly out of date today. In the last five years the number of people recruited in this fashion in the regions of the Russian Federation has dropped by three-quarters. It is evidently high time to think about introducing a new system for the planned redistribution of manpower, one that would measure up to our present tasks. There is no question that we must rapidly improve cultural services and general amenities in the new industrial areas so that people who come to work there will remain.

The fulfillment of the task of providing the economy with the required manpower is of paramount importance in carrying out the great program of economic development which the CPSU outlined at its 21st Congress.

P. KRYLOV:

Some Questions Concerning the Methodology of Long-Range Planning to Raise the Living Standards of the People

The Communist Party and the Soviet government have always considered the constant improvement in the well-being and culture of the Soviet people to be a most important task in developing the socialist economy. V. I. Lenin wrote that the proletarian revolution makes it possible to introduce the "planned organization of the social production process so as to ensure the well-being and full development of all members of society." (1)

Under socialism the conditions for a steady, planned rise in public well-being have been created for the first time in the history of mankind. In its plans the socialist state determines the distribution of the national income of society for the needs of accumulation and consumption, and establishes the general dimensions of the increase in public consumption, its main directions and sources.

The planning of a rise in the people's standard of living rests, first of all, on the state's possession of the chief economic resources of the country, on a nation-wide system of payment for the work of workers and employees, a unified system of retail prices for goods and rates for the chief forms of services provided the population, on Soviet labor legislation, the organization of education, the satisfaction of social and cultural needs, etc. Plans for raising the people's standard of living are based on the development of all branches of the national economy and, above all, on the development of heavy industry, which provides the branches that produce raw material and goods for the population with the means of production.

The very first plans of the Soviet state provided for a broad group of measures to solve a number of urgent questions concerning the material condition of the working people. As the planning principle in economic life developed and became more firmly established, the tasks of raising the people's standard of living were increasingly reflected in state plans.

The pre-war five-year plans combined a

tremendous program of economic construction with a constant rise in the well-being of the people. As a result of their fulfillment, the standard of living of the Soviet people greatly surpassed that of the working people in prerevolutionary Russia. In the postwar period, despite the tremendous losses incurred by the country during the years of the Great Patriotic War, the prewar level of public consumption was not only restored within a short time, but was even considerably surpassed.

The truly revolutionary measures taken by the Party, on the initiative of N. S. Khrushchev, to ensure an expansion in agriculture were of tremendous significance for the rise in the well-being of the Soviet people in recent years. They made it possible to increase considerably the production and public consumption of foodstuffs and industrial goods. Very important measures were taken in a brief period of time to further raise the standard of living of the people: state old-age and disability pensions were increased, purchase prices of agricultural products were raised, wages are being adjusted, the working day is being cut to seven and six hours, and housing construction is under way on a tremendous scale.

The rate at which the people's well-being improved in recent years may be seen from the following figures (calculated on a per capita basis) which are shown in the table on the top of the following page.

At the new stage of development of the USSR — the period of the comprehensive building of communism — the Party has posed the historic task of providing the Soviet people with the highest standard of living in the world.

The USSR has already not only reached, but even surpassed, the most highly developed capitalist countries, including the USA, in a number of important indices of the standard of living (organization of higher and secondary school education, medical service, social security, etc.).

	1959 in % of:		Average annual rate of increase between 1954 and 1959, in %
	1953	1940	
National income	162	370	8.4
Real incomes (per working person)			
workers and employees	145	200	6.4
collective farmers	164	220	8.6
Production of manufactured consumer goods	155	280	7.6
Production of agricultural produce	134	145	5.0
State and cooperative retail trade	157	270	7.8
Money payments and benefits received by the population from the state budget and from the funds of enterprises	153	500	7.4
Housing made available for occupancy in cities and workers' settlements	234	620	15.2

an exceptionally far-reaching program for raising the standard of living of the people is provided for by the target figures for the development of the national economy of the USSR in the period 1959 to 1965. As a result of its fulfillment the USSR will overtake and surpass the most highly developed capitalist countries in per capita production of a number of important foodstuffs and will closely approach the USA level in both total and per capita production of fabrics and footwear. The tasks set in the decisions of the Party Central Committee and the Council of Ministers concerning the development of housing construction in the USSR, tasks intended to overcome the lack of housing in our country, are being successfully fulfilled. Important new measures directed toward raising the material well-being were advanced in N. S. Khrushchev's report to the 5th Session of the Supreme Soviet of the USSR held in May 1960 and they were approved. The decisions taken to abolish taxation of the population, to change the scale of prices, to issue new money to replace the money then in circulation, to complete the transition to a seven-day six-hour working day in 1960, and beginning in 1964, to effect a transition to a 35- and 30-hour working week, are of great importance for the further improvement of the standard of living of the Soviet people. The increase in the incomes of workers and employees as a result of the abolition of taxes alone will amount to about 74 billion rubles per year. In order to further accelerate the development of the food and light industries, the government has assigned the sum of 25 to 30 billion

rubles for the needs of capital construction in these branches in addition to the allocations provided for by the Seven-Year Plan.

In the period of the comprehensive construction of communism, questions concerning the long-range planning of a rise in public well-being acquire particular importance. The state is directing increasing sums of money to develop those branches which are directly connected with satisfying the diverse needs of the population. All of this calls for a further improvement in the methodology and techniques of planning a rise in the material and cultural standards of the Soviet people.

The methodological problems of long-range planning are connected, first of all, with the task of attaining the highest standard of living in the world for the USSR.

The standard of living is determined by a complex of many indices which characterize the satisfaction of all the basic requirements of man. N. S. Khrushchev wrote that "by the standard of living we mean the degree of satisfaction of the material and spiritual needs of man. This refers to food, footwear, clothing, and other consumer goods, housing, education, medical services, sports, all of which ensure man the opportunity to work, rest, and develop his best abilities, and the like." (2)

It therefore follows that under socialism one of the most important tasks is to create such a standard of living as will ensure the complete satisfaction of man's diverse needs. In this connection one of the most important methodological questions

in planning a rise in the people's standard of living is the scientific determination of the needs of the population. In calculating the total volume of purchasing power of the population this task is solved with the aid of current and planned balances of money incomes and expenditures of the population. It is considerably more difficult to determine changes in the demand of the population for particular goods and services.

In long-range planning of improvements in public well-being it is especially important to determine the volume and composition of the requirements of the population for extended periods. The difficulty connected with these calculations stems from the fact that in 15 to 20 years considerable changes will take place in the composition of public consumption, a number of new requirements will appear, and some that now exist will disappear.

The key to the solution of this problem is the scientific determination of the "reasonable needs" about which N. S. Khrushchev spoke at the 21st Congress of the CPSU. What is meant here is the determination of the amount of consumption of the principal material goods needed to ensure the harmonious physical and spiritual development of man.

For this purpose, in drawing up long-range plans of late, rational norms of consumption of major goods and the use of every-day services are applied on a wide scale. The following principles govern the determination of rational norms:

1. The level of consumption of individual goods and services must provide for satisfying people's needs in accordance with scientific requirements so as to ensure the most favorable conditions for the full development of man;
2. In working out the consumption norms we must bear in mind the need to attain a rational composition of consumption with the minimum expenditure of social labor, and consider the concrete conditions prevailing in the production of one or another product.
3. What is especially important is that the rational consumption norms be based on the social conditions of life of man under the socialist system and the gradual transition to communist principles of distribution.

At the same time, the rational consumption norms must provide for a more advanced structure than prevails in the most highly developed capitalist countries, for one must bear in mind that actual consumption in capitalist lands reflects profound social contradictions.

Of late, scientific institutions and various other of our organizations have accomplished a great deal in working out rational norms of consumption of food products and a number of manufactured

goods, as well as various kinds of communal and everyday services. The food norms have been drawn up according to age groups of the population and also in conformity with the various types of work (physical work of different complexity, mental work).

In accordance with the composition of the population of the USSR in 1965, the average rational norms are characterized, for instance, by the following annual figures per capita: bread and butter products — 133 kg., vegetables and melons — 153 kg., meat and meat products — 85 kg., fish and fish products — 14 kg., milk and dairy products — 48 kg., and so on.

The rational food norms for the population of the USSR provide for a level of consumption higher than that in the USA for such valuable food items as milk and dairy products, fish and fish products, fruit and vegetables. By 1965 the composition of the Soviet population's food consumption will essentially approach these rational norms. This is obvious from the fact that the share of animal products in terms of calorific value, will rise to 29% of the total as compared with 20% in 1958, sugar — to 14% as against 9.6%, and the share of bread and potatoes will drop from 62% to 46%. However, a longer period will be required to attain some of the norms, especially that of fruit.

The food norms, just as other types of norms, are not immutable. The average per capita norm will change substantially under the influence of changes in the character of work, in the proportions of people engaged in physical and mental work in the age composition of the population, and also under the influence of the development of the science of rational feeding of the population. In this connection, it will be necessary to increase the precision of rational food norms for purposes of long-range planning.

One of the difficult questions in solving the problem of a rational food supply is that of bringing the levels of consumption of major food products by the population of town and country closer to one another, and also reducing differences between regions in this regard. At the present time the assortment of products consumed by the village population differs somewhat from that consumed by the urban population. There are also certain differences in the level of consumption of a number of food products among different regions of the country. Needless to say, there will be certain variations in the composition of the population's food supply depending upon regions in the future as well. This will be due to different economic conditions and established traditions of consumption in various areas. For instance, according to the consumption

ms drawn up for the Seven-Year Plan, these variations were estimated as follows: for meat — the extent of 1:1.3, for granulated sugar — 1:1.2, milk, dairy products and eggs — 1:2, etc. With e, these variations can be reduced.

n view of the natural, economic and national ularities of various parts of the country, it is great importance to draw up a rational structure ood consumption for the various republics, and o for various groups of the population. In de-mining these norms it is especially important to abine an optimum physiological structure of the d supply with an assortment of food products the put of which is most effective in the given repub- or economic area.

A highly complex problem is that of determining onal norms of consumption of major manufac- ed goods, primarily because there are no defi- e physiological boundaries here as there are in d. Nonetheless, it is possible to establish the roximate composition of the most important es of these goods required to fully satisfy the ds of the population. On instructions of the e Planning Committee of the USSR, in 1957-1959 umber of branch research institutes of light in- try and the Scientific Research Institute of Trade Public Catering, drew up approximate norms the consumption of clothing, underwear and foot- r, depending upon the various climatic zones of country. These norms are characterized by the owing figures:

	Unit of Measure- ment	Per capita annual require- ments
Total amount of fabrics	m ²	58
of this amount:		
cotton fabrics	"	37.5
woolen fabrics	"	5.2
mitted goods for street wear	pieces	1.6
mitted goods for house- hold linen and under- clothing	"	6.6
weather footwear	pairs	3.5

t present these norms are being defined more cisely on the basis of more detailed calcula- s of the population's need for various types of hing and footwear.

he rational norms provide for a higher level of

consumption of fabrics than in the USA, with the level of consumption considerably exceeding that of the masses of American working people. In order to achieve the rational consumption norms for fabrics and footwear we must increase the produc- tion of fabrics by about 2.5 times, and the produc- tion of footwear must also be more than doubled.

Of late, rational consumption norms for a num- ber of basic goods of a cultural and household na- ture have been drawn up. What is most important here is to determine the requirements for such goods on a per family basis. The objective is to enable every family to have a radio, a TV set, a refrigerator, and a number of other cultural and household goods. This will make it possible to sur- pass the USA in the level of consumption of these goods.

In drawing up rational consumption norms for non-food items, there are still a number of com- plex questions which require improvements in our calculations. These include, first of all, a scien- tific substantiation of the durability of goods in- tended for prolonged use and the dates when some items should be replaced by others of better qual- ity, with due regard for changes in the population's tastes; the determination of the chief trends in the assortment and quality of goods, with due regard for the progress of science and technique, and so on. The economic basis of the planned composi- tion of consumption should be considerably im- proved so as to ensure the most effective use of outlays of labor and material resources. In draw- ing up rational norms for the future we must pay close attention to the actual level and structure of consumption by individual groups of the population with different income levels. This calls for a pro- found analysis of budget data for workers, em- ployees and peasants.

Also of great importance in planning a rise in the people's living standards is the use of scien- tific norms in providing the population with housing, communal and everyday services, schools, public health, trade, cultural and educational institutions. Certain norms drawn up by the State Building Com- mittee of the USSR on the basis of a study and gen- eralization of leading experience in urban construc- tion are also being applied in planning cities. These norms cannot, of course, be mechanically adopted for long-term planning, especially for ex- tended periods, inasmuch as new and broader tasks are advanced in these plans, especially in the de- velopment of culture and public health.

The system of rational consumption norms makes it possible to determine not only the optimum satis- faction of the individual demands of the population,

but also to calculate the total real income of the population required for this. For this purpose the so-called rational budget of the population is being calculated. The Labor Research Institute and also, of late, the Economic Research Institute of the State Economic Council of the USSR have been engaged in this work.

The rational budget of the Soviet population, insofar as its tasks and content are concerned, pursues broader objectives than the normative standard budgets of the population in capitalist countries. For instance, the Heller Committee budget, which was worked out over a number of years in the USA, has as its goal the determination of the minimum income required to maintain existing living standards. In contrast to this, the main objective of the rational budget of the Soviet working people is to determine a living standard which will ensure the fullest possible satisfaction of the needs of man in a socialist society in accordance with rational consumption norms. Hence, in its size and structure, the rational budget of the Soviet population goes well beyond the standard of living of the working people in the most developed capitalist countries.

The calculations of the rational budget are being made for the population as a whole, for the urban and rural population taken separately, and also for families of workers, employees and collective farmers. Drawing up rational budgets for people at different income levels is also a matter of some interest.

Of particular significance for the over-all plans for a rise in the people's living standards are the calculations of an average rational budget for the Soviet population, including the urban and rural population. The following consolidated list of items of expenditure is used today in calculating the rational budget:

Food	Housing and communal expenditures
Clothing and Footwear	Transport and communications
Haberdashery and perfumery	Rest, sanitation and hygiene
Goods for cultural needs	Theater, cinema, and other cultural needs
Furniture, household goods and dishes	Household services
Other goods	Other non-commodity expenditures
Total expenditures for goods	Total non-commodity expenditures
Total expenditures	

The data of the rational budget for items of expenditure enable one to determine basic changes in the composition of consumption. They make it possible to analyze the general increase in the share of non-commodity expenditures, including communal and everyday services, rest and recreation and also purchases of goods for cultural and everyday needs, clothing and footwear, while the proportion of expenditures for certain foodstuffs declines.

The rational budget must rest on scientifically based consumption norms to the greatest possible degree. Today about three-fourths of all the expenditures for goods are determined on the basis of these norms. The norms for communal and everyday services are also widely used. In order to take into consideration the possibility of acquiring goods which are still lacking or which are just beginning to be produced, reserves for these purposes are provided in the calculations of the budget. This does not refer to the replacement of some goods by others, but to the appearance of new goods (new appliances of various kinds for the cultural and household services of the population and the like).

The rational budget considers not only the population's consumption of important material value out of personal income, but also those received from the state free of charge or at greatly reduced prices. For instance, expenditures for food and clothing include the full cost, at retail prices, of consumption by children in children's pre-school institutions and boarding schools, the food provided in hospitals, etc. This system of calculation makes it possible not only to determine the total amount of consumption of goods, but also to provide for the necessary increase in the personal income of the population and the income from public funds. The calculation of a rational budget for the urban and rural population is governed by the principle that the differences between living standards in town and country must be largely eliminated. However, we must consider the specific features of the life of the urban and rural population, especially those connected with the fact that certain differences in conditions of work, transport, organization of communal services, etc., will continue to exist.

The drawing up of scientific norms for the consumption of goods and services, as well as the calculation of a rational budget for the population are important in determining, for purposes of long term planning, the necessary increase in the real incomes of the population, the program for increasing production of consumer goods, the development of housing construction and branches of culture and public health.

However, the calculation of the possible requirements of the population on the basis of the national budget constitutes merely the first stage in planning a rise in the living standards of the people. At a later stage, the calculated requirements are organically coordinated with the available material resources as determined by the programs for the production of industrial and agricultural output. Of great significance in this connection is the drawing up of the respective material, labor and financial balances. In the final analysis, the total possible increase in consumption is determined on the basis of the over-all national economic balance. These calculations are being increasingly used in drawing up state plans, as well as in establishing targets for the increase in popular consumption. Under the conditions of a planned economy we can determine not only the general scope, but also the concrete forms of raising the people's standard of living. In a socialist society this improvement in public well-being is achieved in two ways: through a steady rise in the individual incomes received in accordance with the quantity and quality of labor expended, and through an increase in public consumption from the social funds. From the very first years of Soviet power the Communist Party combined payment for work (the major principle of distribution under socialism) with various forms of satisfying the population's needs out of public funds. Despite exceptionally difficult economic conditions, after the Civil War ended, free education, free medical services, and extensive social insurance at state expense were introduced. With the gradual transition to communism, the role of public funds as a major source of improvements in public well-being increases considerably. At the 21st Congress of the CPSU N. S. Khrushchev said that we have a truly communist means for raising the well-being of the working people and for creating better living conditions for society as a whole and for each individual. During the current Seven-Year Plan alone, the grants and benefits received by the population out of public funds will increase from 215 billion to 360 billion rubles. And in succeeding years the public funds will increase even more rapidly. There will be a tremendous increase in the population's consumption out of public funds, first of all because of the development of a system of communist upbringing of the growing generation on the basis of a further expansion in the network of boarding schools and prolonged-day schools, institutions for children of pre-school age, increases in pension security, and greater free material goods and services for the population. All of these call for careful planning of the increase in consumption by the population out of public funds.

At the present time a most important indicator of consumption by the population out of public funds is the extent of payments and benefits received by the population from the state budget and the funds of state enterprises. The amount of these payments and benefits gives some idea of the use of public funds. However, this index does not fully correspond to the amount of public funds. It does not include payments and benefits received by collective farmers from collective farm funds, which in their economic nature are a form of consumption from public funds. It is a known fact that even now collective farms spend considerable amounts of money on the cultural and every-day needs of the collective farmers, on medical treatment, on help to the aged, that they provide material aid to the village schools, and so on. In the near future these payments will increase considerably. It is sufficient to point out that many leading collective farms already make payments out of their social funds amounting to thousands of rubles a year per able-bodied member. These payments, if calculated on this basis for the entire country, will amount to many billions of rubles.

In addition to calculations of the full magnitude of the population's consumption from public funds, the distribution of these funds among workers, employees and collective farmers is also of great interest. These data are especially important in calculating differences in real incomes among groups of the population, and also in analyzing the structure of these incomes.

One of the important questions in planning the public funds is the scientific determination of the composition of these funds. The need for a more precise determination of the composition of public funds must be especially stressed in view of the fact that some economists include in consumption from public funds such forms of collective consumption as public catering and various forms of every-day services, that is, services which are paid for by the population from their personal incomes.

In our opinion, only those forms of material goods and services which the working people receive in addition to their individual incomes for their work, should be considered as part of the public funds. Of course, for certain types of goods which the population receives from public funds, the people's work activity is taken into consideration, but what we refer to here is past work activity, not direct payment for work. This includes pensions, payments for temporary disability and certain other payments made by the state to the population.

The task today is to pay more attention to

questions of planning all forms of public services to the population, including those which are paid out of public funds as well as from the personal incomes of the population. Yet the data drawn up in planning do not fully cover a number of important types of collective consumption. For instance, the data on the volume of public catering do not include feeding in sanatoriums and rest homes, hospitals, factory schools and boarding schools. According to approximate calculations the total volume of public catering would be increased by 15 to 20% by including these elements. Calculations of the total volume of public catering make it possible to estimate the share of public catering in the total food supply of the population. Today this share amounts to only some 15%.

Calculations of the share of publicly organized sewing of clothing in the total consumption of fabrics would be of great interest. According to approximate figures, the value of fabrics used by the garment industry and by various types of dressmaking and tailoring shops constitutes less than one half of the entire production of fabrics, whereas in the USA the garment industry uses about 90% of the total amount of fabrics produced.

Our country has recently begun to rapidly expand special hiring centers where the population can rent, for temporary use, automobiles, all kinds of household and cultural goods, etc. In view of the great prospects for the development of this type of service to the population, the volume of activity in such hiring centers should be provided for in the plans of the Union Republics and in statistical reports.

Relevant data on expenditures for capital investments are also of great importance in characterizing the rise in the well-being of the people out of public funds. It was pointed out at the 21st Congress of the CPSU that in 1965 state expenditures for the construction of houses, schools, cultural, welfare and medical institutions will amount to 75 to 80 billion rubles, or more than 800 rubles per working person per year. This index should be systematically developed in the plans and statistical reports, with the respective capital investments of collective farms being taken into consideration as this is done.

One of the most important questions in the methodology of planning a rise in the standard of living is the scientific determination of the system of indices to be worked out in the plan and in statistical reports. In Soviet planning practice a system of indices has been worked out which characterize the increase in the people's material and cultural standard of living. These indices cover a

wide field of public needs; they provide for the development of a material base for various branches of culture, public health and social security, and define the material resources directed toward the needs of public consumption.

The basic indices of the state plan which characterize the increase in the people's standard of living can be grouped as follows:

1. Over-all indices of the rise in the standard of living.
2. Retail turnover of state and cooperative trade.
3. Housing construction, communal and everyday services for the population.
4. Passenger transport and communications.
5. Public education and culture.
6. Employment and working conditions.
7. Public health protection.
8. Social security.

Also of great importance in planning a rise in the standard of living is the state budget, which provides for financing the main social and cultural branches.

It should be pointed out that various important aspects of public services are still not sufficiently worked out in planning practice. For instance, in the section called "Raising the Standard of Living" questions concerning the development of passenger transport are frequently not included, indices of the amount of transportation facilities in cities are poorly drawn up, and the development of communications is insufficiently represented. The indices of the state plan which characterize employment and working conditions should also be broadened.

For many years there has been no unemployment in the USSR; nor has there been any agrarian overpopulation. Today about 50% of the entire population is engaged in the national economy, whereas in the USA only about 40% is thus employed. In the future the share of the population employed in the national economy will be even greater in view of the planned extensive development of the network of children's preschool institutions, boarding schools, public catering institutions, and various types of collective forms of public services. In this connection we must systematically work out the labor force-population coefficient, for this is of great importance in characterizing the use of labor resources and also in raising the standard of living.

It is impossible within the limits of this article to discuss in detail the entire system of indices characterizing a rise in the standard of living. We shall therefore consider only some over-all indices which are of particular significance in characterizing the amount and sources of the rise in the standard of living of the people as a whole and

various groups of the population. It would be desirable to draw up the system of over-all indices in the following form:

1. National income

Consumption fund including:
consumption by the population

Accumulation fund

including:

increase in fixed capital in housing,
communal enterprises,
branches of culture,
education, public health

Of the total volume of consumption by the population:

- (a) consumption from personal incomes
- (b) consumption from public funds

Material composition of consumption fund of population:

- (a) consumption of foodstuffs
- (b) consumption of manufactured goods
- (c) consumption of gas, electricity, heat
- (d) wear and tear of housing resources

2. Real incomes of working people employed in the national economy including:

Workers, employees, peasants
Rational budgets of the population
Average wages of workers and employees
Minimum wages of workers and employees
Wage fund of workers and employees
Money incomes of collective farmers

3. Indices of retail prices for goods and rates for services

4. Payments and benefits received by population from state budget and from funds of enterprises and collective farms

5. Capital investments in housing and communal construction, branches of culture, education and public health

6. Total cost of services received by population from the state, from enterprises and collective farms

7. Increase in deposits of population in savings banks

The figures on the country's national income constitute the most important indices characterising the rise in public well-being. In the final analysis, under socialism the entire national income is used for the interests of the members of society. At the same time, it is necessary to determine what part of the national income is to be used directly for the needs of popular consumption. It should be borne in mind, however, that the consumption fund includes not only all forms of personal consumption by the population but also a number of expenditures connected with state administration.

However, the fund for personal consumption by the population increases as a rule more rapidly than the total amount of the consumption fund, whereas the share of expenditures for administration steadily declines.

Not only does the consumption fund of the national income affect the rise in the standard of living, but a considerable part of the accumulation fund does also: the increase in fixed capital in housing and communal construction, culture, education and public health. For a complete picture of the share of national income that is used to satisfy the needs of the population, it is necessary to consider this part of the accumulation fund. It is growing considerably today. Thus, the share of investments in the non-production sphere today constitutes more than a third of all capital investments.

Of great importance in determining the rate at which real income is increasing is the calculation of this income not only on a per worker basis but also per head of population. The reason for this is that the calculation of real income per worker does not take into consideration the influence of increases in the proportion of the population which is employed. It is therefore necessary to calculate the increase in real income, especially for extended periods, on a per head basis first of all, and also on a per worker basis.

More attention must also be paid to calculations of the total volume and composition of the consumption fund of goods and products. These are not yet sufficiently used in planning. In addition to the indices of consumption of goods acquired in shops, also of great importance in public consumption are the goods and products received through cultural and public health institutions (hospitals, boarding schools, kindergartens, etc.), as well as products received from collective farms for workday units and from the auxiliary farms of the collective farmers. These calculations are especially important for long-term planning inasmuch as the share of the various sources of consumption will change sharply.

It is also necessary to work out indices of total consumption of goods and products from all sources in money terms. This type of calculation would make it possible to determine not only the volume but also the material structure of consumption, which is of special significance in drawing up the chessboard balance of inter-branch relationships.

Another important question in planning consumption is the problem of providing the population with durable goods. For these goods it is necessary to determine not only the amount of current production but also the amount of such goods accumulated by the population. In the future, our country should

overtake the USA in durable goods, both in total production as well as in provision on a per family basis. In view of the difficulty of determining the durable goods that are in the possession of the population, it would be advisable to conduct a special investigation, and to use for this purpose the system of individual budgets of workers, employees and peasants.

Another factor of great importance is the detailed planning of the increased supply of various types of communal and every-day services. It is necessary to improve calculations of the consumption of gas, electricity and heat by the population. Over-all data on the amount of power consumption is a most important index for improving every-day services to the population. It is sufficient to note that the consumption of electricity for every-day needs in the period 1959 to 1965 will almost double per head of population. This fact reflects the rapid process of equipping the home with various types of apparatus and devices.

One of the important questions in calculating the people's standard of living is the determination of the total volume of consumption by the population of all kinds of services received from the non-production sphere. At present, in calculating the use of national income these services are included in the material expenses of the branches of the non-production sphere. It seems to us that it would also be desirable to calculate as a separate index the total volume of consumption by the population of all types of services and cultural benefits received from the non-production sphere. The expenditures of the state and of enterprises for the maintenance of the respective branches of culture, public health, social security, etc., could serve as a basis for the calculation of this index.

The over-all indices of the rise in the people's standard of living are drawn up first of all as average data giving a general picture of the rise in the well-being of the workers, employees and peasants. However, in addition to these data, more differentiated indices of the rise in the well-being of various groups of the population are necessary. These indices are especially important today in connection with the task of eliminating the excessive gap in the earnings of individual categories of working people which has appeared in the post-war period. In calculations for the future it will apparently be necessary to draw up plans for raising the standard of living of groups of the population with different income levels.

An important problem in the system of indices characterizing the rise in the standard of living is that of drawing them up according to Union Republics and for town and country separately. As a

result of several recent measures the role of the Union Republics in planning the basic indices that are directly connected with the people's standard of living has been considerably enhanced. Many questions connected with the planning of retail trade, branches of culture, public health and housing construction within the limits of the basic task set in the national economic plan, have been turned over to the Councils of Ministers of the Union Republics.

Under these conditions it is particularly important to draw up all the basic indices of the standard of living on a per capita basis for different units of territory — the Union Republics, regions, areas and individual cities. These data are necessary in order to determine correctly the speed with which trade, branches of culture and public health are to develop in the different parts of the country. In 1958 the Union Republics began to work out a number of general indices of a rise in the standard of living, including real wages and real incomes, which will furnish important material for the more correct planning of the rise in the standard of living on a regional basis.

One of the most important problems in planning an improvement in public well-being is that of bringing the standard of living of the urban and rural population closer together in every possible way. In planning and calculating the rise in the standard of living in town and country, in working out individual indices, a number of difficulties arise which are connected with calculating consumption by the rural population in cities and workers' settlements. This concerns both the consumption of goods as well as every-day services, educational establishments, hospital and polyclinical aid, etc. Of course there is no need to systematically plan and calculate the extent of consumption by the rural population in cities, but in order to obtain a complete picture of the level of rural consumption special investigations should apparently be conducted.

There are a number of other questions on the methodology of planning the indices of a rise in the standard of living of the Soviet people which have not yet been sufficiently worked out. The task of the scientific and practical planning workers is to ensure a more profound and thorough working out of the methodological problems connected with the planning of the rise in public consumption, so that this material may be used in drawing up national economic plans.

Footnotes

(1) V. I. Lenin, Collected Works, Vol. 24, p. 4 (Russian edition).

(2) Pravda, January 15, 1958.

EMEL'IANOV AND V. KRASOVSKII:

Methods of Determining the Economic Effectiveness of Mechanization and Automation

A broad program of technical improvements of production is now being carried out in the Soviet Union. One of the means of furthering technical progress is the comprehensive mechanization and automation of production which raises the technical facilities per worker, improves the organization of production, makes for the intensification of technological processes, promotes higher labor productivity, lower production costs and better quality output.

Mechanization and automation are not only of economic importance but are also of great social significance. In a socialist society the comprehensive mechanization and automation of production processes meet the vital interests of the working people, ease and radically change the nature of the work of millions, create conditions for shortening the working day and for eliminating essential distinctions between manual and mental labor. The 21st Congress of the CPSU set the task of eliminating arduous manual labor in industry, construction, transport and agriculture through the comprehensive mechanization of production processes.

A tremendous part in carrying out the decisions of the 21st Party Congress and the June (1959) Plenary Meeting of the Party Central Committee is being played by raising the effectiveness of new technology and by demonstrating more clearly the expediency of developing and applying new technology. This article deals with the main methods of determining the economic effectiveness of mechanization and automation. These methods have been worked out by the Economic Research Institute of the USSR State Planning Committee jointly with the USSR Academy of Sciences, the State Scientific and Technical Committee of the USSR Council of Ministers, the USSR Academy of Construction and Architecture, and approved by the collegium of the USSR State Planning Committee.

Calculations of the Economic Effectiveness of Variants of Mechanization and Automation of Production

In calculating the economic effectiveness of mechanization and automation we must take the fullest account of the entire saving of social labor resulting from the employment of equipment and automatic devices, determine the favorable consequences of mechanization and automation for the national economy, and make extensive use of the qualitative analysis of effectiveness. The main criterion of economic effectiveness is the increase in the productivity of social labor. This forms the basis of separate indices of economic effectiveness.

In determining the economic effectiveness of mechanization and automation we must proceed from the directives of the Party and the government on the primary importance of the most effective allocation of capital investments, an allocation which makes it possible, with reduced outlays, to expand production capacities, and in the shortest time to increase industrial output with a sharp growth of labor productivity and a reduction of costs.

In conformity with these directives, the main indices for assessing the economic effectiveness of mechanization and automation are:

- a) capital investments required for the mechanization and automation of production;
- b) production costs;
- c) the period of recoupment of capital outlays on mechanization and automation, and the corresponding coefficients of effectiveness;
- d) output per worker, labor expenditure per unit of output, and the number of released workers;
- e) expansion of output and a decline in the duration of the production cycle as a result of mechanization and automation.

Along with the main indices, account should also

be taken of improvements in working conditions and safety (elimination of accidents on the job and occupational ailments).

The following additional technical and economic indices are considered in analyzing the separate aspects of the effectiveness of measures applied to concrete production conditions:

an increase in the degree of utilization of production capacities (greater output per unit of equipment or square meter of production floorspace, greater coefficient of efficiency);

speed of operation of the equipment (drilling speed, high speed metal cutting, etc.);

reduction of expenditures of raw and other materials, fuel, electric power, etc., per unit of output;

improvements in the quality of output (better grade, greater durability);

increased maneuverability, rhythmic operation of equipment according to previously established schedules, a general rise in the culture of production;

reliability of operation of the equipment.

The best operating Soviet models of mechanization and automation devices, the latest models of foreign machinery, and also experimental models or the most economical designs should be taken as the points of departure in choosing the most effective allocations and optimum variants of mechanization and automation.

To establish the real magnitude of the effect, we should take as a basis the mechanization and automation devices or manual labor sections which are to be replaced by new, more efficient models or mechanized processes, and also the models most frequently used in the given branch if the new equipment and automatic machinery are designed for wide use at new plants or production shops.

If the development, introduction and mastery of designed capacities of new mechanization and automation devices take two or more years, provisions should be made for adjusting the basic indices and allowing for possible changes by the time the new models are mastered. In introducing new designs of mechanization and automation devices which entail an increase in the scale of production, the indices taken as a basis for estimating the economic effectiveness should be recalculated with due regard to the changes in the output program. Expansion of production as a result of mechanization and automation is an important additional indicator of effectiveness.

The most effective variant of mechanization and automation, as compared with the basic variant, is the one requiring the least capital outlays and involving the lowest production costs. If, however,

the reduction in production costs can be achieved only through increased capital investments, the question of the effectiveness of such a variant must be decided by comparing the additional capital outlays and the savings on current expenses, that is, by calculating the period of recoupment of the additional capital investments.

If the variants of mechanization and automation which are being compared differ in the periods of designing, manufacture and introduction, account should be taken of the time factor, that is, the consequences of both acceleration or delay in the commissioning of the equipment. To do this, the savings resulting from the earlier implementation of the mechanization or automation measures should be deducted from the sum of capital outlays for the measure in question. The calculated index for the recoupment period should be adjusted accordingly.

Capital outlays on mechanization and automation consist of the cost of the new equipment, the cost involved in its transportation and installation (if the latter is not included in the equipment cost), the cost of new buildings and structures, designing expenses, etc.

In the calculations of economic effectiveness the sum of capital investments designated for mechanization and automation should be increased or decreased by the corresponding difference between the amounts of working capital of the variants being compared. Calculation of the difference in the volume of uncompleted output is necessary only in cases when this equals a substantial sum (over 5% of the equipment cost).

In calculating capital outlays account should be taken of the utilized part of the old equipment (according to its residual value), the part of the value of liquidated equipment not covered by depreciation (if it cannot be used efficiently in other sections) and the value of the released equipment that can be sold.

The value of the liquidated equipment that has not been covered by depreciation (K_y) is established by the formula:

$$K_y = K_n (1 - aT) - K_1$$

where K_n — original value of the liquidated equipment;

a — annual rate of depreciation for renovation;

T — number of years the equipment has been in operation;

K_1 — liquidational value of the equipment.

Additional capital investments represent the difference in capital outlays of the comparable variants, allowing for changes in the annual output.

In calculating capital investments for

mechanization and automation, the outlays on equipment and automation devices should generally be reckoned according to the prices in the existing price-lists, and if there are none, according to the prices used in revaluing fixed assets, or the contract price of the corresponding equipment. Expenses for the manufacture of special equipment introduced by the enterprises themselves are determined on the basis of its estimated cost.

To avoid excessively high estimates of the cost of new automation devices, in some cases we should use prices of new equipment adjusted for conditions of serial production. In calculating effectiveness the sum of capital outlays should not include initial outlays for research, designing and preparatory work (including the manufacture of the first experimental model or the first experimental series of items) connected with the mastery of new mechanization and automation devices and carried out prior to their serial production. These expenses can be financed from the fund for the mastery of new technology set up at economic councils, ministries and departments of the USSR.

In the absence of ready designs and estimates the amount of capital investments can be established on the basis of rounded off standard rates drawn up by branch research institutes, special designing offices and other organizations. For example, the cost of equipment can be determined on the basis of the standard norm for the cost of a kilogram of weight of machines of new design, the standard norm of the labor expenditure per unit of new equipment, approximate share of overhead costs, etc. A reduction of production costs of finished outlays, services, etc., as a result of applying mechanization and automation measures is determined by calculating the cost of production of a unit of output under the basic and comparable variants.

The planned cost of production of a unit of output, the actual cost, if it is no higher than the former, is used in the basic variant for calculating the effectiveness of mechanization and automation. In the case of mechanization and automation of intermediate processes or jobs, when it is impossible to establish the full cost of production, only outlays for performing separate operations should be calculated.

In branches with relatively high expenditures of labor (ore, coal, non-metallic minerals, timber, etc.) the calculation of economic effectiveness of mechanization and automation made on the basis of production costs, can sometimes substantially minimize the real effectiveness. That is why, when comparing variants of mechanization and automation in these branches, it is necessary to calculate the adjusted cost of production, taking into

account not only the payroll of an enterprise but also the outlays on state social and cultural facilities and housing construction.

If a comparison of all the production costs is not required to ascertain the reduction of costs and the saving involved, the calculation is made only for the expense items which change as a result of introducing the given measure, for example, only wages, electric power, depreciation, overhead expenses, etc.

For separate items the calculations are made as follows:

a) the saving of basic and auxiliary materials and power resulting from mechanization and automation is established by taking the difference in the norms of expenditure per unit of output in the basic and comparable variants and multiplying it by the total annual output. If there are no norms for the basic variant or they are too high, the rate of expenditure is determined by the actual results of the last six months. Lower spoilage and smaller losses of materials resulting from mechanization and automation must be taken into account in determining the reduction in production costs;

b) changes in outlays on wages of the main production workers per unit of output are established by using the rates applicable to the basic and comparable variants and allowing for the additional wages and social insurance allotments. In some cases the changes in the total payroll can be calculated on the basis of the difference in the number of workers engaged in the particular section, the equipment maintenance quotas and the average monthly wage of a worker under the basic and comparable variants. Specifically, this method of calculation should be used for time-work sections and for determining the change in the total payroll of auxiliary workers (fitters, electricians, oilers, etc.). The change in the number of auxiliary workers by trades is established in accordance with the existing equipment maintenance quotas or other indices calculated on the basis of actual performance;

c) changes in outlays for depreciation of equipment are calculated according to the cost of the equipment under the basic and comparable variants, and the existing depreciation rates. The cost of the equipment for the comparable variant should include expenses for equipment purchased by the enterprises or manufactured by it and also the cost of the old equipment used under the comparable variant plus the outlays for its modernization;

d) the most important expenses for repairs, the wear and tear of fixtures and tools, outlays for lubricating materials and wipers should also be established by direct calculation. Relatively smaller expenses and also separate expense items which

are difficult to ascertain should be estimated in percentage of wages or direct expenses. Expenses for tools can be estimated by using the data of the respective designing institutes and offices.

In determining production costs when introducing mechanization and automation, account should be taken of the saving in expenses not only at the given section but also at related sections and lines of work (for example, a saving in weaving stemming from improvements in spinning; a saving on processing of parts owing to improvements in procurements, etc.).

If the selling prices and rates of the means of production differ sharply from the average branch cost of production plus the normal rate of accumulation (within a range of 10 to 12%), a trial adjustment of the prices should be made for purposes of calculating effectiveness. This should be done first of all in the case of prices which include the turnover tax or a sharply increased rate of accumulation (prices mazut, natural gas, etc.) and also in cases where the cost of production is strongly influenced by a preferential rate for electric power or by exceptional rail freight rates. The adjustment should be made only for the prices of the means of production which account for a big share of production costs.

Indices of the recoupment period are calculated in two ways: as the ratio of additional capital investments to the saving from the reduction of production costs under the comparable variant, or as the ratio of new capital investments to the saving from the real reduction of production costs as compared with the actual conditions. The coefficients of effectiveness of capital outlays on mechanization and automation in both cases are reckoned as values which are inverse to the index of the recoupment period.

The recoupment period and the coefficients of effectiveness of the additional capital investments are used mainly in choosing the most effective trends of mechanization and automation, and also the optimum variants of mechanization and automation.

Determination of the recoupment period of additional capital investments (T_{ok}) and the coefficients of effectiveness (E) is done according to the formula:

$$T_{ok} = \frac{K_2 - K_1}{C_1 - C_2} \text{ or } E = \frac{C_1 - C_2}{K_2 - K_1} \quad (2)$$

where K_1 and K_2 — capital investments under the compared variants adjusted for a similar scale of production;
 C_1 and C_2 — the annual production expenses under the same variants.

The recoupment period and the coefficients of effectiveness of new capital investments are used to determine the effectiveness of introducing particular mechanization and automation measures in concrete production conditions.

The recoupment period of new capital investments (T_n) is determined according to the formula

$$T_n = \frac{K_n}{C_f - C_2}$$

where K_n — new capital investments in mechanization and automation measures;

C_f — the actual annual production expense prior to the introduction of the mechanization and automation devices, adjusted to the new volume of output in the latter changes;

C_2 — annual production expenses after the introduction of the devices.

To establish the economic effectiveness of the comparable automation and mechanization variants we must compare the recoupment period or the coefficients of effectiveness of capital investments under these variants with the standard recoupment norms and coefficients of effectiveness.

Standard coefficients of economic effectiveness and recoupment periods should take account of the specific features of the industry and the conditions of production, the level of advanced technology, including foreign technology.

Recoupment periods should be differentiated according to the nature of the measures. For those involving partial mechanization or automation it is advisable to set the standard recoupment period up to three years, and for measures involving the reconstruction of the technological set-up of an enterprise, or considerable replacement of equipment and the like, the standard period can reach up to six years.

The labor requirement per unit of output is determined for the basic variant in man-hours actually expended; for the comparable variant at the designing stage — in norm hours, allowing for the expected overfulfillment of the respective norms; after the mechanization and automation program is implemented — in actual man-hours expended.

If the mechanization and automation measures influence the number of all categories of workers in an enterprise (for example, in case of the all-round mechanization and automation of shops or tire enterprises), the indices of labor requirement per unit of output must be determined by making allowance for all workers in the corresponding section of production or the enterprise as a whole.

Output per worker in physical and in money

ms for the basic and comparable variants and to the indices of growth in labor productivity calculated on the basis of the above indices of requirements per unit of output.

The index of the number of released workers is determined by the difference between the number of workers needed to produce the volume of output planned after the implementation of the measure under the initial level of labor productivity, and the number of workers needed to produce the same volume of output under the level of productivity attained as a result of introducing the mechanization or automation measure.

The volume of output is estimated on the basis of the maximum possibilities of production in the year when the given measure is introduced.

Unutilized production capacities of the introduced mechanization and automation devices should be taken into consideration in choosing the best variant. All other conditions being equal, preference should be given to the variant with a reserve production capacities.

The output per ruble of capital investment under initial and new variants should be determined by dividing the value of the annual output by the sum of capital investments for each variant. These calculations are made only for large-scale measures and at sections where the value of the annual output can be calculated.

Choosing the Most Effective Trends of Mechanization and Automation

Calculations are made at enterprises of all the indices for each mechanization and automation measure which is to be included in the plan. To choose the most effective trends of mechanization and automation, calculations are made for a wider range of measures than those that can be included in the plan.

The most effective measures are chosen on the basis of data on economic effectiveness of the particular measures and the amount of money that can be allotted for the planned period. The initial price of measures is dependent on the period of recoupment of the capital investments. The measures with short recoupment periods (with differences of 15 to 20%) are analyzed further according to a system of economic indices which consider the concrete tasks of production in the forthcoming planned period. Improvements in the quality of output, better working conditions and greater safety should be given special consideration.

The results of calculations of the economic effectiveness of mechanization and automation programs are classified according to sections of

production (foundry, forging, mechanical processing, assembly, etc.) and types of jobs (material handling, transportation, storing, control, etc.), which make it possible to compare the magnitude of effectiveness of different trends in mechanizing and automating production.

The following data are prepared in economic councils for purposes of choosing the most effective trends of mechanization and automation and establishing the sequence of measures to be taken:

- data on the lines of production in which automation is a requisite for carrying on the production process, improving the quality of output, increasing precision and speed of processing, etc.;

- a list of sections with harmful and injurious working conditions, and sections requiring special health protection measures;

- requirements of special branches of industry; data on "bottlenecks" in the existing system of mechanization and automation;

- data on the level of mechanization and automation of production;

- summarized data on mechanization and automation devices per worker in different branches;

- comparable data by enterprises of the economic council and similar plants in foreign countries on the composition of equipment, the share of different means of mechanization and automation, the scope of available automation and mechanization devices per worker, labor productivity and capital investments per unit of output.

The economic council, guided by this material and making use of calculated indices for particular measures, classifies the data on the economic effectiveness of mechanization and automation measures by branches of industry, trends and types of mechanization and automation.

Initially, just as at enterprises, the selection of measures is made according to the period of recoupment of the capital investments; after this, an analysis of the above-mentioned data establishes the economically most effective trends of mechanization and automation; then, a plan for introducing the selected measures is drawn up, that is, the sequence of mechanization and automation measures in the economic council is established.

Calculations of economic effectiveness of mechanization and automation should be accompanied by an economic analysis of allied branches of production and a full determination of the saving of social labor in the national economy.

In determining the volume of capital investments allocated to various comprehensive mechanization and automation measures, we must consider not only the direct investments in the given industry (branch), but also the required investments in

branches which will have to be expanded because of the planned mechanization and automation measures. Account should also be taken of the special allotments for the development of precision-instrument production, electronic and other automation devices, if these outlays are directly connected with implementation of the mechanization and automation program. On the other hand, the saving in capital outlays achieved in allied branches as a result of automation should be considered (for example, the saving of capital investments in new capacities for the production of raw materials by cutting the norms of raw material consumption through the stabilization of technological regimes in automated production). An accounting of the attendant capital investments is made on the basis of the standard norms of capital investments per unit of output in the given branches.

In analyzing the saving of social labor as a result of mechanization and automation, we must take account not only of direct changes in the payroll of the corresponding personnel, but also possible changes in outlays for housing construction, cultural and public establishments — especially in undeveloped areas — and the influence of mechanization and automation on the balance of labor resources by areas, on outlays for advanced training, etc.

In the long-term plans, indices of effectiveness of mechanization and automation should be determined on the basis of summarized data (standard norms) which are worked out by analyzing many reports on the actual results of introducing corresponding measures in previous years, and also on the basis of plans for the introduction of new technology by branches, design materials and data of research and designing organizations.

In addition to general principles, the methodology examines the specific features of determining the economic effectiveness of mechanization and automation in industry, construction, transport and agriculture.

The specific features of determining the economic effectiveness of mechanization and automation in industry are examined in relation to the machine-building industry and branches which employ new mechanization and automation devices (power engineering, mining, geological prospecting, lumbering and chemical industries, etc.).

In the machine-building industry the methodology contains recommendations for calculating effectiveness at the pre-designing, designing and manufacturing stages of new mechanization and automation devices. The cost of the mechanization and automation devices at the pre-designing stage is

to be calculated according to the following formula

$$C = (M \times Z + D) n \quad (4)$$

where C — the wholesale selling price of the new equipment, in rubles;

M — the weight of the equipment in kilograms, minus the parts, assemblies and appliances that are bought elsewhere;

Z — norms of expenses in rubles per kilogram of weight of the machine without the purchased parts (including the cost of material);

D — total cost of the parts, assemblies and appliances bought elsewhere, in rubles;

n — coefficient which takes into account the average per cent of planned profit in branches of the machine-building and instrument-making industries which fabricate the given equipment.

At the designing and manufacturing stages the field of application of the mechanization and automation devices and their productivity become known in greater detail. This enables more precise calculations to be made of the cost of the machine and the cost of production, as well as other technical and economic indices of the effectiveness of the new machine as compared with the basic (most advanced) model.

If the designing and organization of fabrication of new mechanization and automation devices involves the reorganization of production and sizable capital outlays, the effectiveness of introducing these devices should be calculated with an allowance for these capital investments. That is why apart from the expenses of the user for the purchase of the equipment, it is also necessary to include the additional outlays at a machine-building plant caused by the reorganization of production (the installation of new equipment, changes in fixtures, etc.).

In developing several new machines which comprehensively mechanize the production process, and when the new machine requires, as compared with the existing one, different appliances to make up a complete set, the economic effectiveness is established by comparing the two variants of comprehensive mechanization: one with the set of new machines and the other with the machines which are currently utilized on similar jobs.

In branches of the machine-building industry where serial production is preceded by the manufacture of experimental models which undergo trials and tests for a certain period, it is necessary to finalize the designed economic effectiveness by taking into account the data of the tests. The list

indices of economic effectiveness when going over to serial production remains unchanged. The methodology suggests the following standard norms of the recoupment period of capital outlays:

- a) modernization of equipment — one or two years;

- b) automation of production processes with the installation of various instruments — two or two and a half years;
- c) comprehensive mechanization and automation of manual labor, automation of production processes through the replacement of ordinary equipment by semi-automatic and automatic machines, introduction of comprehensively automated production processes, shops, enterprises and other mechanization and automation measures — three to four years.

In calculating the economic effectiveness of automating power supply systems, account should be taken of the saving which can be obtained by consumers as a result of raising the degree of an uninterrupted supply of electricity and improving technical parameters.

The following additional indices are used to determine the effectiveness of mechanization and automation at electric power stations:

- a) the efficiency of a unit, electric station or transmission line, determined by the ratio of utilized or generated power to the power capacities;
- b) consumption of conventional fuel per kilowatt-hour of generated electricity or per million calories of heat, and in the case of hydro stations — the consumption of water, in cubic meters, per kilowatt-hour of generated electricity;
- c) the capacity coefficient of a unit, electric station or transmission line, determined by the over factor of alternating current.

The following additional indices should be used in determining the economic effectiveness of mechanization and automation in the mining industry:

- a) losses of mineral reserves;
- b) improvements in the extraction of useful components and greater yield;
- c) faster commencement of production by cutting down time required for preparatory work;
- d) improvements in the comprehensive utilization of the raw material.

It is pointed out in the methodology that the effectiveness of variants of mechanization and automation in the mining industry should be determined for equal geological and mining conditions. For example, in comparing the indices of mechanization of entries and stoping with a different methodology, it is necessary to choose the following

equal mining and geological conditions: type of mineral, size of deposit, physical and mechanical properties of the mineral and the enclosing rocks, gas content, underground waters, self-ignition, etc. The production conditions must be similarly equal: methods of stowage in the stopes, the cross-sectional areas of the mine working, etc.

In construction, as distinct from industry, the system of general obligatory standard norms now in operation is the basis for determining the indices of economic effectiveness of mechanization and automation. These norms include: uniform norms and rates for construction and installation jobs, construction codes and rules, lists of uniform rates by districts, lists of norms for construction machinery working in shifts, lists of norms for freight shipments of building materials, the specified periods of construction of industrial enterprises, units, installations, etc. The methodology here deals with the specific features of calculating the period of building industrial establishments and the accelerated commissioning of production capacities.

Of special importance is the effect of mechanization and automation measures on speeding up the various operations of the transport process, for the mass of goods being transported simultaneously depends on the speed of goods delivery.

In addition to the main indices, which are the same for all branches, it is advisable to take into account the speed of transportation of goods and passengers, the saving in rolling stock, the resulting reserves of railroad capacities, greater safety of traffic, reduction of interruptions in traffic, etc. The methodology also gives examples of calculating the effectiveness of replacing the electric staff system by centralized dispatching control, the effectiveness of mechanizing track overhauling, the effectiveness of introducing a better variant of automating the operation of a ship's engine and the loading system of "M" tankers.

The specific features of determining the economic effectiveness of mechanization and automation in agriculture are outlined in the final section of the methodology. That section gives examples of calculating the economic effectiveness of a mounted seed drill unit consisting of three drills: two S3N-10 mounted on the SN-35A hitch and one S34-16 drill mounted on an MTZ-2 tractor.

On the whole, the methodology comprises an important document which solves on a common theoretical basis the general and specific problems of economic effectiveness of production mechanization and automation.

I. MALYSHEV:

Concerning the Effectiveness Indicator of Capital Investments

Of late many works have been published dealing with the question of the economic effectiveness of capital investments. These include a large number of articles published in various periodicals, official handbooks on methodology, and monographs. Nevertheless the job of scientifically validating the indicators of effectiveness is not yet complete and much work remains to be done in this field. This has been brought home to economists by the July 1960 Plenum of the Party Central Committee.

It follows that it would be useful to examine some theoretical aspects of the indicator of effectiveness of capital investments by means of a critical analysis of some recent works dealing with this question.

1. Criteria and Indicators of Effectiveness

After consultation with other institutions interested in this problem the USSR Academy of Sciences has released a Standard Methodology for Determining the Economic Effectiveness of Capital Investments and New Technology in the USSR National Economy. (1) The foreword contains the names of a large group of scientists who took part in the elaboration of this problem. Judging by the opinions expressed by these authors in the press and at scientific conferences, they belong to different schools of thought in this particular field. There is nothing wrong with that, of course, for the methodology must be examined and discussed from all points of view. The trouble is that the various viewpoints have unfortunately been incorporated into the contents of the guidebook; this gives it an eclectic quality — it does not rest on a unified theoretical foundation.

We shall dwell on the inadequacy of the theoretical substantiation of the methodology when we examine certain related questions, but now let us examine its basic formulation:

"The index of economic effectiveness of the entire sum of capital investment in the national economy is the coefficient of general (absolute) effectiveness, represented by (in comparable prices) the ratio of the increase in the net product to the capital

investment that has generated it..." Generally speaking this proposition is correct, but too abstract. The authors have not taken the trouble to show the practical application of this method, and for that reason the above statement remains no more than a declaration. It is self-evident that capital investments and the increment of net product on the scale of the whole national economy can only be compared once the investments have been made, the capacities put in operation, and the product turned out. Once this is accomplished and it is found that the net product derived is small and the investment insufficiently effective, this will be a poor consolation.

But let us discard pessimism and assume that comparison of the increment of net product and of capital investment shows that the ratio of the former to the latter is higher than in the past, when the old fixed assets were in operation. We should not take comfort in this for the following reason. First, comparison on a scale of the whole national economy does not reveal the cause of this increase, whether it is due to new capital investments or to a more efficient use of the old capacities, whose potential unquestionably had been far from exhausted. Second, an over-all positive indicator for the national economy can include both a highly effective application of investments in some sectors and enterprises, and a much lower effectiveness in others. What we need is an indicator offering every guarantee of a high effectiveness in all sectors and enterprises.

Moreover, an increment of net product (national income) in relation to capital investments may also be achieved when there is a decline in the productivity of social labor. All that is needed for this is to use investments on outmoded equipment and to compensate for its obsolescence by a greater use of living labor. As a result, one can achieve a high degree of "effectiveness" even with low labor productivity. It is common knowledge that under capitalist production relations whole sectors can be operated along these lines. But under the socialist system there is no room for such contradiction.

In its concrete form the net product (national income) consists of wages and profits. Very

* Submitted for discussion.

important consequences flow from this. An enterprise (sector) may use capital investments for the purchase of outdated plant, have a low labor productivity, expend labor lavishly, pay out a great deal in wages and make no or very little profit (income for society). Yet by adding up wages and profits this enterprise may show a higher indicator of effectiveness than others.

It follows that mere declarations on "absolute" effectiveness obviously will not suffice. Effectiveness must be embodied in a concrete indicator whose economic value is identical in the whole national economy and in every sector and individual enterprise. Moreover, this indicator must be determined not after the investments have been made, the enterprises built or reconstructed, and the product turned out, but before all this, at the planning stage.

To find this indicator we must remember the following: an increment of the net product (national income) indicates not only a rise in wages but also higher profits, providing of course that the wage level established by society is not decreasing and wage standards remain unchanged. It follows that it is easier to form a judgment of the growth of the national income and its relation to capital investments on the basis of the ratio of additional profits to new capital investments.

In our view the period of recoupment of capital investments is the economic indicator of effectiveness; to put it in other words, the latter is represented by the ratio of the rate of profit to fixed assets and working capital. This indicator is also included in the standard methodology under review, but it is relegated to the background as if it were merely a concession to its advocates. The manual goes on to say: "In addition to the coefficient of general (absolute) effectiveness of capital investments, the effectiveness of the latter in an enterprise may be determined by the use of the coefficient obtained with the help of the profit indicator used in cost accounting practice ... and which is determined by the difference between the annual output of an enterprise expressed in terms of wholesale prices (of the enterprise) and its production costs in relation to all capital investments" (our italics I. M.).

It follows that those who use this method are free to choose either the indicator of "absolute" effectiveness or the one used in practice. Let us see what this leads to. For this purpose let us examine another method of determining the economic effectiveness of mechanization and automation of production with due regard for the specific features of different branches. (2) The general principles of this methodology have been worked

out by the Economic Research Institute (ERI) of the USSR State Planning Committee with the assistance of the Institute of Economics of the USSR Academy of Sciences and a number of other institutions. The ERI methodology is designed for certain branches of production and takes into account their specific features. One would assume that it proceeds from the principles formulated in the methodology of the USSR Academy of Sciences. This however is not the case.

To begin with it does not even mention the "absolute" coefficient of effectiveness. This is perhaps understandable, inasmuch as nobody knows, as we have pointed out, how to apply it in practice. What is surprising, however, is the attitude of the authors of the ERI method toward the second indicator proposed by the Academy of Sciences, namely the period of recoupment. It cannot be easily ignored, for in practice it has been used everywhere for a good many years. For this reason, instead of this particular indicator alone, a whole series are suggested, among which the recoupment indicator figures very inconspicuously. To begin with, this series includes, as pointed out by the authors, "five basic indicators for assessing effectiveness," although in fact there are really more, for the fourth indicator — "output per worker, labor-intensity of output, and the number of workers that are released" — combines at least two indicators. The basic indicators "which have a concrete quantitative expression," are supplemented by six "qualitative" characteristics, and this whole structure is crowned by nine "supplementary (special) indicators." There is no point in dwelling in detail on the above, all the more so since the authors who have written a volume containing nine chapters have not taken the trouble to devote at least a few pages to an explanation of the theoretical foundations of their formulations. It may be added that the Academy of Sciences, too, has not offered a theoretical substantiation of its methodology. For this reason, in order to examine the theory underlying the indicator of effectiveness of capital investments, we must turn to A. E. Probst's work on this subject. (3)

This work compares favorably with many others because it raises essential theoretical problems of capital investment effectiveness. Unfortunately, in our opinion, the author gives the wrong answer to most of the questions raised. And when the answers are right he does not draw the proper conclusions.

Probst is quite right in asserting that "the level of productivity of social labor is an objective criterion of the economic effectiveness of new industrial equipment, of technical progress." He also

convincingly demonstrates the necessity of using a single criterion in assessing the economic effectiveness of fixed investments.

It is a fact that even if for the time being we discard the numerous qualitative characteristics and supplementary indicators of effectiveness incorporated in the ERI methodology, it will still contain at least six basic indicators, and all of them may conflict with one another in actual practice. Small capital investments (first indicator) as a rule result in high production costs (second indicator), and vice versa. A high production capacity in an enterprise may be achieved with both a high or a low output per worker. A short period of recoupment is possible when production costs are low, and this requires big investments; on the other hand, a short recoupment period may also be achieved with smaller investments, but the costs of production will be higher. When there are many indicators one will find quite a few contradictions of this kind. That is why we believe that Probst is right in stating that there should be a single criterion, and that "unity must inevitably replace multiplicity, and lack of principle (in whatever shape it is concealed) in this question must be replaced by a strict position of principle" (p. 15).

However, after adopting this absolutely correct viewpoint, Probst relinquishes it because in his view the criterion of effectiveness should not be "confused" with the indicator of effectiveness. Here is what he says on the subject: "Indicators of economic effectiveness may vary because technical progress takes place in different forms and directions and has varying and often heterogeneous economic consequences" (pp. 15-16). It is true that technical progress assumes an infinite number of forms. But we are dealing now not with indicators of technical progress but with the indicator of the economic effectiveness of this progress. Hence, the variety of changes in technology, if they are really progressive, cannot cause "varying" or even "heterogeneous" economic effects; they must be the cause of only one economic effect: higher productivity of social labor. Anything that fails to promote this one and only effect is not technical progress, in spite of all innovations, improvements, complexity of design, etc., which may appear on the surface. This is the economic essence of technical progress, and it must be embodied in a single "criterion." A single "criterion" must be expressed by means of a single, comparable, and equivalent indicator.

2. The Social Level of Profitability: An Indicator of Labor Productivity

Thus the economic effectiveness of capital

investments is expressed by a single indicator — the growth of the productive power of social labor. If this is the case it means that we must find a medium for determining such a relationship between increasing labor productivity and capital investment as would clearly show that the latter is actually stimulating the former, not only in a given enterprise but in the entire national economy.

The degree of labor productivity depends on the extent to which labor is equipped with means of production created by capital investments. This is common knowledge, and therefore we may state that a sector using relatively little manual labor and a great deal of machinery achieves a higher labor productivity than sectors which have a lower level of mechanization. However, the levels of labor productivity in various sectors are incomparable. When we say that one working day may yield 0.6 centners of milk in a state farm, 9 tons of pig iron in a metallurgical plant, 1.5 cubic meters of timber in a timber enterprise, we can demonstrate that in one of these undertakings labor productivity is higher than in the others. Different types of products cannot be compared in natural form. Of course, we might make them comparable by calculating the amount of social labor embodied in each unit of one or another product, then express that labor in equivalent money terms, and thus make the products comparable to society in terms of value. But this method will not yield the results we need. Comparison of the net product on the basis of the formula $(v+m)$ will show that unit of similar social labor in a meat and dairy state farm will yield the same amount of net product as it would in a metallurgical plant or in a timber enterprise. It is impossible to reveal any differences in labor productivity in various sectors through this method. Perhaps this means that we should take the total value of the products according to the formula $(c+v+m)$, i.e., take account of the value of the means of production used in the manufacture of those products. It is true that if the total value of the product of a given sector is divided by the number of workers we will derive the level of labor productivity. However it is impossible to decide in which sector labor productivity is higher and in which it is lower by merely comparing these levels because the share of material outlays in the value of the product in different sectors varies greatly. For instance, in ferrous metallurgy it amounts to 76% while in the timber industry it is only 36%. On the one hand, these differences are due to purely material peculiarities of production. The iron and steel industry needs raw materials — ore, coal, fusing agents; the timber industry does not require them. Metallurgy

and the timber industry need very different types of machines and installations. On the other hand, these differences are due to the varying value of the equipment and raw materials needed in different sectors, and this value depends on the productivity of labor in the sectors producing raw materials and equipment. For this reason, some sectors expend more means of production and some less; in some sectors the value of material outlays per unit of living labor is small, while in others it is much larger.

This means that labor productivity in one sector cannot be compared with that in another sector, either in natural or money form. And yet labor productivity in any sector is related to and dependent upon labor productivity in the others. It follows that the growth of labor productivity is important and necessary not only in any given sector but in social production as a whole. Here is an illustration of this.

Labor productivity in the timber industry, let us assume, could be raised to a very high level. For this purpose it would be necessary to build helicopters powerful enough to uproot trees and transport them to dressing plants, to deposit them on specially designed conveyors from which, without use of manual labor, felled trees would come off in the shape of finished timber. In that case the labor now needed in the timber industry would be transferred to machine-building (for manufacturing helicopters and conveyors), and in the timber industry, due to vast capital investments, labor productivity could rise considerably. But it is still a question whether this would reduce society's total outlay of labor for the timber industry. It must be borne in mind that with the present level of technology it is not feasible to invest capital per unit of product on the principle "the more the better." The effectiveness of investment, i.e., the effect it has on the growth of labor productivity, has a limit which can be overcome only by raising present-day technology to a new and higher level. Moreover, out of the great number of types of modern machinery, it is always necessary to select those that are most suitable and offer the greatest advantages, and for this purpose technical indicators will not suffice. Investments earmarked for reconstruction of existing plants or the building of new ones deepen the social division of labor, providing, of course, that these investments are used for more modern and efficient machinery. In this case, part of the labor expended for the manufacture of a given product is transferred to other branches turning out means of production. For instance, grain may be produced with manual labor and simple horse-drawn implements. It can also be produced with the

help of tractors and harvester combines working on liquid fuel; by using chemical fertilizer and by substituting chemical weed-killers for hand weeding. In this case part of the labor expended in grain production is transferred to the machine-building, chemical and oil refining industries and, by the same token, to the metallurgical, oil, ore, coal, and other sectors.

The product of any given enterprise is not the result of the labor of the workers of that enterprise alone, but the product of the whole system of socialist production. Individual enterprises are only links in the whole chain, in which all links differ from one another in the degree of mechanization, amount of means of production on hand, and in their ratios of past to living labor. That is why the growth of labor productivity in one link, at one stage of the production process, cannot provide a satisfactory basis for estimating this growth in the whole system of social production. It may remain at the former level, or even decline after allowing for outlays of labor at earlier stages. When we are dealing with the growth in labor productivity resulting from capital investments in one or another sector or enterprise, we must not lose sight of labor outlays at earlier stages of production. Only an over-all accounting of labor will enable us to ascertain whether one cubic meter of timber or one centner of grain produced on the basis of a certain technological pattern will consume more or less social labor than would be required if a different pattern were adopted. This means that a uniform accounting of the social labor expended in turning out various products, an accounting that is equally applicable to all sectors, and the expression of these outlays in terms of money, are indispensable conditions for assessing the growth of labor productivity and, therefore, the effectiveness of capital investments.

A. E. Probst also holds that for determining the degree of effectiveness it is necessary to estimate value, and devises a series of mathematical constructions showing what coefficient of effectiveness will be obtained by comparing the total decline in value with the total capital investment (p. 52). However, he does not have a very clear idea of how value can be measured, although he is obviously convinced that it is possible to estimate its decline. We do not agree with this pessimistic view of the possibility of measuring value; on the other hand, we cannot imagine how its drop can be assessed, and what is more, we do not think it necessary to do so. The point is that to verify the actual effectiveness of capital investments as compared to plan estimates, it would then be necessary to consider two values: the value which is

effective at any given time, and the one existing before supplementary investments were made, i.e., the past value. Under the circumstances the social accounting of a product, from any minor production link to the whole national economy, would have to be performed on the basis of three indicators: a) production in its natural form; b) its value; c) the total decline in value compared to the preceding period, i.e., the difference between past and present value.

The first two indicators in use today are inter-related, coordinated, and exercise a check on each other. Under the existing actual social norms of labor outlays, any increase or decrease of output in natural form is accompanied by a corresponding modification of the total value; and this works both ways. As for the third indicator, it would have no relation to the movement of the product either in an individual enterprise or in the national economy as a whole.

Every enterprise would be given the opportunity of representing it by any figures, for they exercise no influence on anything or anybody, nor do they reflect any material values. Instead of an economic indicator of effectiveness we would have abstract illusions which would not go very far in the realm of economic necessity.

In order to assess the effectiveness of capital investments we must know how much social labor is expended on the output of every type of product, that is, their value and price which characterize this outlay. However, value and price alone will not reveal the effectiveness. Another intermediate link is needed here for the following reason. Whatever technological pattern of timber production is in effect at different places — hand-saw and horse haulage, electrical saws and tractor haulage, or even helicopters — the social norm of labor outlays and the price of every unit of processed timber must be uniform. Effectiveness can be gauged only by the profit of a given enterprise in relation to the fixed assets obtained from the capital investment. Under the existing socially established prices and wages, the growth of labor productivity yields an increase in surplus product expressed in terms of profit. It goes without saying that under socialist production profit is not an end in itself, although without the latter the former could not be developed. As labor productivity grows, society can reduce prices and raise wages, thereby reducing the level of profit. But even under the new and lower level of profit, any rise in labor productivity will once again be expressed in a higher profit level, which is an indicator of the saving of labor compared to the existing social norm of labor outlays.

What does this mean for the effectiveness of capital investments? If the investments are really

effective, if the machinery acquired with these investments has raised labor productivity, then the level of profit in relation to this enterprise's assets is bound to increase. If the level of profit remains stationary, this means that the expansion of production proceeds with an unchanged technical base. A lower level of profit means that the investment has been used to acquire outmoded machinery which has reduced the level of labor productivity. This, under the socialist system, is the content of the level of profit or the period of recoupment of capital investments.

3. A Uniform Standard Period of Recoupment

The methodology of the Academy of Sciences states: "At present standard coefficients by branches should be established at not less than 0.15-0.3, which is equivalent to periods of recoupment of not more than 3 to 7 years. For some branches (transport, power) longer standard periods may be set, but these must not be more than 10 years (a standard coefficient of effectiveness of not less than 0.1)." Unlike this methodology, the one published by the ERI does not fix different periods of recoupment for different sectors; on the other hand, the periods are differentiated according to size of investment. For instance, outlays for small-scale mechanization and automation by introducing simple equipment and mounting apparatus and devices on existing machinery must be recouped within a year or 18 months, i.e., these outlays must yield a profit of 65 or 100%; outlays on mechanization and automation of various processes and partial replacement of machinery must be made good within two to three years, which means that they must yield a profit of 33 or 50%. The wider the scope of reconstruction (setting up of automatic lines and shops, complete retooling of shops and enterprises, change of technological pattern), the greater the period of recoupment and the lower the corresponding level of profit.

The following point, however, still remains unexplained. All investments in mechanization and automation must raise labor productivity and, by the same token (prices and wages remaining unchanged) the level of accumulation should grow. The question is, therefore, why should small investments (in small-scale mechanization) result in such a tremendous rise in labor productivity (100% profit), while sizable investments (comprehensive mechanization and complete retooling) should raise labor productivity to a far lesser degree (16 or 17% profit). There is no direct mathematical interdependence between the growth of capital investments and labor productivity. This

perfectly clear. Nevertheless, from the economic standpoint, it is just as evident that in principle big investments must result in as high a growth of labor productivity as the investment of small sums. If this were not the case there would be no incentive for making sizable investments — they would be made on the smallest possible scale. The period of recoupment established in the ERI methodology is uniform for all sectors. The methodology of the Academy of Sciences, on the contrary, sets different periods of recoupment for different sectors. Why this contradiction between the "standard" and "partial" methods, if we take it for granted that the latter must necessarily take account of the specific nature of different sectors on the basis of the standard method? It is all the more surprising when we find that the authors of both methods include the same individuals. It stems from the fact that the authors do not have a clear concept of the economic content of effectiveness; hence, to one and the same question one method supplies one answer, and the other a totally different one.

But why should there be different coefficients of effectiveness for different sectors (ranging from 10 to 30%)? The standard methodology states: "Standard coefficients of relative effectiveness, differentiated according to sectors, must taken into account the structure of assets and the specific nature of the given sectors, their rate of technical progress, and the achievement of advanced foreign technical standards." What does this prove? The structure of assets and the specific features of the given sectors are determined by the nature of production in any given sector. The iron and steel industry has one structure of assets, the coal industry another, machine-building still another. The rubber and textile industries have different specific features, and so on and so forth. Is the economic indicator of effectiveness determined by natural factors? If this is the case, then why should it be designated as economic? Besides, at least a brief explanation should have been given of the nature of the relations existing between the specific material features of different branches, the structure of their assets and the coefficient of effectiveness. In our view such relations do not exist.

Let us turn now to the rate of technical progress. It is true that it exercises a direct influence on the effectiveness of capital investment. However this influence can be measured only if a uniform measure of effectiveness is applied, i.e., if we proceed from an initial norm common to all sectors. If from the outset different norms are applied in different sectors, it would be absolutely impossible to assess the economic significance of the rate of

technical progress. Establishment of different coefficients of effectiveness for different sectors simply means that we strive to realize higher rates of technical progress in some sectors than in others. One may ask why we should strive for a slow rate of technical progress in some sectors, especially in such important ones as power and transport? And we repeat, the important point is that when different criteria of economic effectiveness of technical progress are adopted in different sectors, it is impossible to verify whether our purpose is being achieved. It is therefore necessary to adopt for all sectors an average social minimum of standard effectiveness and then calculate its actual value for different sectors. This is the only way of measuring the economic effectiveness of every form of technical progress, both within a sector and in different ones. If from the outset we establish various norms which have no foundation whatsoever, we will not learn much about the actual effectiveness of capital investments, i.e., the effect of technical progress on labor productivity.

As pointed out before, in his book Probst raises, or rather enumerates, the basic theoretical problems relating to effectiveness. Let us turn to his statements in the hope of finding the answer we need. Although the book contains a chapter entitled, "Impossibility of Applying Uniform Coefficient of Economic Effectiveness to all Sectors," in our opinion his argument in support of this categorical assertion is not convincing. Here is what he says: "Inasmuch as different rates of development in various branches are inevitable, there are bound to be distinct average coefficients of economic effectiveness for every branch" (p. 112). Even in capitalist production it is not the rate of development of any given sector that determines the effectiveness of capital investments; on the contrary, the rate of development depends on the effectiveness of investment. Under the socialist system this form of relation is ruled out, for under this system the rate of development of any sector depends on society's requirements for a given sector's product and, of course, on the volume of social accumulation which can be allocated to achieve this rate of development. As for the effectiveness of investment, i.e., the growth of labor productivity, it is to society's advantage to achieve maximum effectiveness in all sectors, whether they develop at a faster or slower pace. If, given the present state of science and technology, labor productivity in some sector cannot rise rapidly, its development will nevertheless be accelerated as soon as this becomes necessary for society. But in the sectors producing interchangeable goods (and there are quite a few sectors of this type) it is to

society's advantage to accelerate the development of those sectors in which labor productivity is growing more rapidly.

Let us now take a careful look at the various standard periods of recoupment or coefficients of effectiveness. What is meant by the statement that the standard coefficient of effectiveness should be 30% in one sector, 20% in another and 10% in a third? It means that when these sectors market their products, their fixed assets must yield not less than 30, 20, and 10% profit respectively. It is thus assumed that the surplus labor of society is divided in such a way as to be included in the value (to be concrete, in the price of production) of various products in varying and arbitrary proportions, unrelated either to the outlays of living labor or to the volume of fixed assets in the given sector. As a consequence, the amount of social labor expressed in the price of any given item will not correspond to the actual outlay of labor needed for that item's production. Under such circumstances it would be impossible to assess the growth of labor productivity resulting from capital investments and technical progress. What actually takes place when capital investments are made in the textile industry, for instance? Within the limits of the money advanced the industry is allocated certain amounts of cement, metal, glass, machinery; it uses the labor of construction workers and assemblers, and it creates fixed assets. Later on, still within the limits of the assigned funds, the industry is allocated a certain quantity of cotton, dyes, electric power, fuel, auxiliary materials, and working capital is formed which includes the wage fund of the textile workers.

The production process (under existing prices and wages) yields, in addition to other things, a surplus product in the form of textiles. How can we find out what part of this surplus product really stems from the growth of labor productivity? We know that to one extent or another a surplus product results when labor productivity is constant or even decreasing. This means that we must compare the additional surplus product with the additional capital investments. To do this, the amount of social labor embodied in all material components of the capital investments and of the surplus product should be assessed equally and according to a uniform rule, i.e., according to the social labor embodied in them. We can determine the amount of social labor embodied in each product only if all the surplus labor is distributed not arbitrarily (10, 20 or 30% of the fixed assets in three different sectors), but on the basis of a uniform norm for every sector, a uniform average social ratio to fixed assets. This average social ratio of total surplus

product to total fixed assets is at the same time the actually existing average norm of effectiveness. Comparison of the effectiveness of new capital investments in any enterprise of any sector with the average actual effectiveness in the national economy as a whole will show whether the new investments have or have not raised the productivity of the total social labor. That is why we need a uniform norm of effectiveness. Without it we cannot find either the actual amount of social labor embodied in the product of any given sector or the actual effectiveness of new capital investments, i.e., the actual growth of productivity of the total social labor (not merely productivity in a given enterprise) resulting from the new capital investments.

Probst's argument against a uniform coefficients, we believe, from his failure to understand the distinction between a norm of effectiveness and actual effectiveness. A uniform norm of effectiveness is a minimum — the lower range of the scale for comparing the actual effectiveness — without which the actual effectiveness cannot be estimated. Various concrete investments inevitably have and will continue to have varying (greater or lesser) effectiveness. Anybody can understand this; but what follows from it? If the actual effectiveness of new investments is equal to the average norm, it means that labor productivity remained at the average level of social productivity; if effectiveness is higher than average, labor productivity has gone up; if it is below the average norm, labor productivity has fallen. In the course of social reproduction technical progress does not proceed equally in different sectors. It follows that labor productivity, too, inevitably grows at different rates and the outlays of labor for the output of various goods change in relation to the socially established norm. This obvious fact does not require any special proof.

But the main conclusion flowing from the above is not that socially established norms of labor outlays and of effectiveness of capital investments are neither feasible nor desirable; what it shows is that at certain intervals these norms should be revised and adapted to the new level of labor productivity and to the new ratio of necessary to surplus expenditures of labor. Thereafter the new uniform norm of the social effectiveness of capital investments will likewise begin to exercise, as it did in the past, its function of a lower obligatory limit for comparing the effectiveness of new capital investments.

4. Economic Significance of the Time Factor

The methodology of the Academy of Sciences

makes it possible to estimate correctly the economic effect of an extension or reduction of the required construction time. Enterprises, whose construction requires more time, cost more. The total increase in costs is determined by the compound interest formula, taking into account the amount of "frozen" capital investments and the period during which they drop out of the production sphere. However, the reader may get a one-sided impression of this subject because this method is not scientifically substantiated and only one explanation is offered: capital investments are spread over a period of time, without due regard to the time at which the project must be commissioned. In short, it creates the impression that the longer the period of time over which investments are spread, the greater are the accruing advantages, because during this period the funds are used elsewhere and yield a corresponding economic effect. It is probably partly because of this concept that A. E. Probst time and again notes that "the methodology of the economic assessment of the time factor is one of the problems that has been least studied in Marxist economic literature" (194).

We cannot agree with this and will point out that the second volume of *Capital* Karl Marx clearly demonstrated the economic importance of the time factor in the production and circulation of various products. In socialist production the uniform social rate of profit, calculated on an annual basis in relation to the production assets of the various sectors of the economy, reflects the economic significance of the time factor. Whoever fails to understand this will never understand the economic significance of the time factor and will continue to find that "so far no methodology for the economic assessment of the time factor in the socialist economy has been worked out" (p. 195); and this will place him in an embarrassing position if he tries to find other methods of estimating the economic value of time and finding an indicator of investment effectiveness.

In the light of the above it may be worth our while to examine one of the objections advanced by Probst against the application of compound interest in economic estimates. It will be all the more useful because on the one hand his objections are supported by some other economists, and on the other, its appearance in economic treatises is a rather unique phenomenon. Here is what Probst has to say:

It will suffice if we subject the calculations of economic effectiveness based on compound interest to an elementary economic analysis to realize how absurd are the results obtained. If we take as a starting point an annual coefficient of economic effectiveness of 10%, then according to mathematical

laws, and in particular the compound interest formula, the annual coefficient of economic effectiveness will amount to (in %):

in 10 years	24
in 23 years	99
in 31 years	212
in 42 years	545

There is no need to prove the absurdity of the conclusion that productivity of social labor and output in the whole national economy can grow several times over in the course of one year" (p. 65).

It is quite true that the calculations presented by Probst are absurd. But it is not the compound interest formula that is at fault; as is the case with any other formula it must be understood and one must know how to use it. That is why we are not in the least worried by such a categorical condemnation of this formula and feel confident that the latter reflects the actual process of extended reproduction.

It will be recalled that the Seven-Year Plan sets the annual average growth of industrial output in the USSR at 8.6%, which adds up to about 80% for the whole seven year period. Let us see on what this target is based (in %). (See table shown on the top of the following page.)

If compound interest did not reflect the actual industrial advance in the Soviet Union, then its industrial output would go up only 60% in seven years ($7 \times 8.6 = 60.2$), whereas the plan target set its growth at about 80%. Moreover, the annual average rate of growth of 8.6% remains unchanged at the end of seven years, while the absolute volume of production growth amounts to 14.1 points (not per cent) and is almost double the absolute volume of growth in the initial "base" year, when it amounted to 8.6 points and coincided with the percentage figure.

We have dealt in such detail with this question because we hold that it is absolutely necessary to use the compound interest formula in calculating the outlays of social labor for certain products, buildings and installations whose production requires different periods of time, as well as for determining the social norm of profitability and the social norm of effectiveness of capital investments.

Footnotes

- (1) Published by Gosplanizdat, Moscow, 1960.

Years	Annual average growth of industrial output	Annual absolute volume of growth	Volume of industrial output calculated on the basis of compound interest
1st	8.6	8.6	108.6
2nd	8.6	9.3	117.9
3rd	8.6	10.1	128.0
4th	8.6	11.0	139.0
5th	8.6	12.0	151.0
6th	8.6	13.0	164.0
7th	8.6	14.1	178.1

[Also see Problems of Economics, Volume III, No. 6. — editor.]

(2) Metodika opredeleniia ekonomicheskoi effektivnosti vnedreniia mekhanizatsii i avtomatizatsii proizvodstva s uchetom spetsifiki otel'nykh

otraslei, Gosplanizdat, Moscow, 1960.

(3) A. E. Probst, Ekonomicheskaiia effektivnost' novoi tekhniki, Gospolitizdat, Moscow, 1960. Quotations in our text which follow are from this book.

GARBUZOV:

The Soundest Currency in the World

By decision of the Soviet Government the gold content of the ruble was raised, effective January 1, 1961, from 0.222168 grams to 0.987412 grams. Simultaneously the rate of exchange of the ruble with respect to the US dollar was also raised; it is now equal to 90 kopeks instead of four rubles. The State Bank of the USSR has also changed the exchange rate of the ruble with respect to the currencies of other capitalist countries to conform to the new gold content of the ruble. The new gold content has made the Soviet ruble 11% "heavier" than the US dollar; and it is the only currency in the world today with a gold content that is higher than it was in 1913. Underlying the higher exchange rate of the ruble and its gold content are the great successes scored by socialism in its peaceful economic competition with capitalism. As N. S. Khrushchev stated in his report at the 21st Congress of the CPSU: "The economy is the main field in which the peaceful competition between socialism and capitalism is unfolding, and we are interested in winning this competition in a historically short period." Under the leadership of the Communist Party and its Leninist Central Committee our people are enthusiastically implementing the program for building a communist society charted by the historic 21st Congress of the CPSU.

The Soviet Union's socialist economy is growing at a rate that is beyond the reach of any capitalist country. This is clearly shown by the country's economic development in the last 10 years. Between 1950, when the previous gold content of the ruble was established, and 1959, industrial output in the USSR rose 180%, in the United States — 41%, and in Britain — 26%. The national income increased most 150% in the Soviet Union, 32% in the US, and 27% in Britain. Labor productivity in industry went up 88% in the USSR, 39% in the US, and 27% in Britain.

In 1960 the Soviet people scored new gains: the

Citations from American and British newspapers now have been retranslated from the Russian —

volume of industrial output rose by 10%. The targets for the first two years of the Seven-Year Plan were overfulfilled — industrial output exceeding the targets by roughly 12 billion new rubles. The plan for 1961, approved by the Sixth Session of the Supreme Soviet of the USSR, envisages an increase of 8.8% in industrial output over last year.

All this testifies that in the peaceful competition between the two social systems, the young and vigorous socialist system is gaining the upper hand. The time is not far off when the Soviet Union will fully carry out the task set by the great Lenin, namely, to catch up with and outstrip the leading capitalist countries economically. "According to our calculations," N. S. Khrushchev said in his conversation with Cuban journalists, "we shall carry out this task — we shall surpass the United States of America in the output of principal products per head of population by 1970, i.e., in 10 years. According to economists' estimates, by 1980 we shall be producing considerably more products per head of population than the United States. By 1965 we shall be producing as much consumer goods per head of population as the European countries or even more."

The Soviet Union's successes in the economic competition between socialism and capitalism are also reflected in the steady consolidation of its monetary system and the strengthening of the position of the Soviet ruble with respect to the currencies of the capitalist countries.

In contrast to the monetary system of the capitalist countries, the monetary system of the Soviet Union, which is an important component part of the socialist economy, is sound and stable. The explanation for this is primarily the fact that in the USSR there is a planned regulation of money circulation in strict accordance with the stocks of commodities at the disposal of the state. Wholesale and retail prices of commodities are also fixed by the state, which thus determines the purchasing power of the ruble in a planned manner. The steady growth of social production and the national income, the increase in commodity stocks at the disposal

of the state, the rise in retail sales, coupled with the country's gold reserve, ensure the soundness of the Soviet ruble and create the conditions for steadily raising its purchasing power.

Retail sales in the USSR increased almost three-fold between 1950 and 1960, the increase last year being 10%. Between 1950 and 1959 wholesale and retail prices declined 25%, which means a rise of one-third in the purchasing power of the ruble. Moreover, the real incomes of wage and salaried workers went up 62%. The Seven-Year Plan provides for a 62 to 65% expansion in the output of consumer goods and for a further reduction in retail prices. This will lead to a still greater rise in the purchasing power of the Soviet ruble.

Based as it is on a planned socialist economy, our monetary system is not affected by the crises and shocks which are characteristic of a capitalist economy. The foreign trade and foreign exchange monopoly reliably protect the Soviet ruble from fluctuations in the capitalist world market due to ups and downs in business activity. All of this has made the ruble the soundest and most stable currency in the world.

While the purchasing power of the ruble is steadily rising, the purchasing power of the currencies of capitalist countries is steadily declining. In the conditions of the general crisis, inflation has become an inescapable concomitant of capitalism. It is increasingly being used by the ruling circles in the capitalist countries as a means of attacking the living standard of the working people, reducing real wages and redistributing the national income in favor of the monopolies. The rise in military spending due to the arms race is intensifying the inflation. In its effort to shift the burden of military outlays onto the working people, the monopolist bourgeoisie is raising prices of consumer goods and depreciating currencies through inflation. Between 1950 and 1959 retail prices in the United States increased 21% and wholesale prices 16%. Retail prices continued to climb in 1960.

"The record prices of clothing and the exorbitantly high cost of living quarters," the Washington Post and Times Herald wrote last October, "led to prices of commodities soaring to a record high last month, and payments for a wide range of services, from medical services to hair-cuts going up with unflinching regularity."

Prices have gone up even more in Britain: in nine years retail prices have increased 48% and wholesale prices 32%.

The crisis in the monetary system of the main bourgeois states is reflected in the ever increasing instability of the capitalist currencies. The aggravation of the contradictions inherent in capitalism

at the present stage of the general crisis has affected most of all the world position of the American dollar — the very dollar that for many decades had served for the bourgeoisie of all countries as the symbol of the power and durability of the capitalist system.

The United States monopolists extensively advertised the dollar as the currency of currencies of the capitalist world, believing that dollars will buy not only goods but the freedom and independence of whole nations as well. In giving foreign states so-called assistance and credit, they have actively interfered in the internal affairs of other countries trying to subordinate their economy to their own setting up and supporting regimes that are inimical to the people, and supplying arms to their partners in aggressive blocs.

In recent years, however, the political as well as the economic position of the United States in the world arena has changed considerably. The international position of the dollar has been seriously undermined, and this is now admitted by the Americans themselves. Joseph Alsop wrote in the New York Herald Tribune that "the American economy is experiencing stagnation. The position of the once mighty dollar has dangerously deteriorated in world markets."

As we know, the fluctuations in the exchange rates of the currencies of capitalist countries are determined by the state of their balance of payments, that is, the ratio of money receipts to payments on all types of transactions with foreign countries. A country's balance of payments depends primarily on the trade balance and the factors determining it: the general state of the economy, the dynamics of industrial and agricultural production, the dynamics of commodity prices, the condition of the home market and money circulation. Under imperialism, the export of capital and the amount of military spending by capitalist countries abroad directly influence the balance of payments.

The vast military expenditures by the United States and the mounting export of state and private capital, with the aim of extracting high profits and economically shackling other countries, are the main reasons for the deterioration of the United States' balance of payments and the decline of the dollar's prestige in the world market.

Acting as an international gendarme, American imperialism maintains military bases in practically all countries of the capitalist world. Military expenditures by the United States have been mounting steadily. Direct military expenditures alone in 1960 came to 45.6 billion dollars, three and a half times the amount spent in 1950. Military outlays abroad, not counting military assistance to its

partners in the aggressive blocs, reached the immense sum of close to 10 billion dollars in the last three years. With the aim of welding together aggressive military blocs aimed against the Soviet Union and other peace-loving states, and in pursuit of huge profits by utilizing relatively cheap labor and rapaciously exploiting natural resources in other countries, the United States has exported some 5 billion dollars to foreign countries.

At the same time, the United States is increasingly losing its advantages in the technical level of industry and, hence, in the level of labor productivity and costs of production. American commodities are therefore becoming less and less capable of competing in the world market. Another factor that is limiting the exports of American commodities is the policy of discrimination in trade with the socialist countries. All this has resulted in a sharp deterioration of the United States trade balance. The excess of exports over imports, which in 1957 amounted to \$6.1 billion dropped to \$3.3 billion in 1958 and to \$900 million in 1959. This considerable deterioration in the balance of trade has been another reason for the growing deficit in the United States balance of payments.

In the three-year period 1958 to 1960 the deficit in the United States balance of payments exceeded \$11 billion, and to meet the deficit it regularly had to export gold. As a result, its gold reserve declined during this period by more than \$5 billion, and on January 1, 1961 it stood at \$17.7 billion, the lowest level in the last 20 years. In November of last year alone the loss of gold by the United States reached \$450 million. At the same time, its foreign indebtedness under short-term obligations has increased and now amounts to (exclusive of banknotes in private hands abroad) \$20 billion, or more than the country's entire gold reserve.

More and more often the press in the capitalist countries has expressed the thought that devaluation of the US dollar, that is, the lowering of its gold content and rate of exchange, is inevitable. It is believed that before long the price of gold in the United States will be raised from \$35 to \$50 per ounce, and possibly even more. According to the French weekly *Tribune des Nations*, the new President of the United States, Kennedy, "believes that devaluation of the dollar is necessary but he would not like to take the responsibility for it," and he finds it desirable "to have the Eisenhower Administration make an unofficial statement on that score."

All this has resulted in the fact that not only foreigners are losing confidence in the dollar but first and foremost, American capitalist themselves. Holders of dollars are buying up gold in European and other markets, and are also converting dollars

into West German marks, pounds sterling and other currency. The London *Daily Herald* wrote that "in a decade the wheel has made a complete turn and the American dollar has become the most unreliable of the principal currencies."

A feeling of embarrassment is clearly discernible in the following story written by the well-known newspaperwoman, A. Robb, for the *New York World Telegram and Sun* on the decline of the dollar's international prestige. Two Americans recently touring Greece tried to pay their Greek guide in dollars and were surprised to hear him say that he preferred to be paid in Greek drachmas. "Tomorrow," he told them, "your dollars may be worth no more than half of what they are worth today. Nobody knows what may happen to the dollar and how much longer it will be worth anything. Could you not dispose of it somewhere else?" "Americans," the newspaperwoman wrote, "naturally find it hard to accept the stern fact that the dollar, after being undisputed financial king for so long, should now appear in such a depressing light."

In place of pursuit of the dollar there has come the "flight from the dollar." This has caused great anxiety among American ruling circles. According to press reports, last November a special conference was held in Augusta, Georgia at which measures were discussed to lessen the deficit in the balance of payments, reduce the loss of gold and "save" the dollar.

Last autumn, perhaps for the first time in its history, the United States appealed to other countries for help: the Eisenhower Administration tried to persuade Western Germany and Britain to assume a part of the United States military outlays in Europe. However, the attempt was unsuccessful. The trip of Secretary of the Treasury Anderson and Undersecretary of State Dillon to Bonn and London ended in failure.

The United States has taken steps to cut its spending abroad, without, however, cutting down the total amount of military outlays. Among other things, it has been decided to send back home 284,000 members of the families of American military personnel living abroad and "go over with a critical eye" the salaries paid to 247,000 foreign citizens serving at US military bases and other establishments abroad. American commercial organizations abroad have been forbidden to buy foreign goods for sale to United States diplomatic personnel, and military garrisons in other countries, too, have been ordered to stop buying foreign goods. Things have gone so far that the Pentagon has ordered American military personnel to use only alcoholic beverages made in the United States.

A sharp deterioration in the international position

of the dollar is the penalty the United States must now pay for the adventurist policy of militarization of the economy it has pursued ever since the end of the war. The New York Times said in an editorial entitled "America's Economic Balance" that "the conventional idea of the United States as an international Croesus and object of envy of the less fortunate countries has, with an almost breath-taking suddenness, become an idea of an impoverished country forced to ask for help abroad to escape bankruptcy."

The United States is also exerting pressure on its partners. In his instructions to federal agencies, Eisenhower directed that in their economic relations with other countries "special attention should be given to obtain maximum possible tariff concessions from foreign states ... and to make sure that the concessions ... are fully utilized in the interests of American exports. Financially strong countries will be requested to continue revoking their quantitative restrictions, to lower excessively high tariffs and abolish discriminatory measures and other obstacles to increasing exports of American goods and services, in particular, of American farm products."

Is there need to say that all these measures will deal a blow to the interests of US allies in the aggressive blocs and are causing serious concern to government and business circles in Britain, Western Germany, France, Italy and Japan?

The instability of the American dollar, and of the currencies of the other capitalist countries as well, has been aggravated by their huge public debt, which is rapidly growing as a result of the arms race. In nine years the public debt of the United States has increased by \$34 billion, amounting at the end of 1959 to \$290.9 billion. During the same period the public debt of France and Italy more than doubled.

Notwithstanding the fact that the Soviet Union shouldered the greatest burdens of the war against Nazi Germany, its public debt is one-tenth that of the United States. Consistently pursuing a policy of peace, the USSR has reduced its armed forces and cut defense spending, and is using the money released for peacetime economic development. This contributes to the strengthening of Soviet currency.

The growth of the public debt stemming from the arms race has impelled the ruling circles of capitalist countries to boost taxes, which leads to a decline in the living standards of the working people. At the same time, the Soviet Union in 1959 inaugurated a program of gradual abolition of taxes levied on wage and salaried workers. Earlier, in 1958, the floating of government loans among the population was discontinued.

The USSR's foreign debt is negligible, being confined to current transactions, while the indebtedness of other countries to the Soviet Union is much greater than its external debt. At the same time the USSR provides disinterested economic, scientific and technical aid to the socialist and underdeveloped countries (India, Indonesia, the United Arab Republic, Iraq, Afghanistan, and so on), granting them long- and short-term credit.

Thus, the increased exchange rate of the ruble and its higher gold content reflect the fundamental difference between the development of the socialist and capitalist economies. The general crisis of capitalism also manifests itself in the crisis of the monetary system of the bourgeois states, its characteristic features being a steady decline in the purchasing power of their currencies, instability of their exchange rates and gold content, and severe disequilibrium in their balance of payments.

The new exchange rate of the ruble relative to the currencies of the capitalist countries was fixed on the basis of the actual relationship between the purchasing power of the currencies with respect to the whole national product. In today's conditions this way of determining the rate of exchange of the ruble is most sound economically.

Before World War I banknotes were freely exchangeable for gold and currencies were convertible into one another. The purchasing power of currencies then was determined by their actual gold content and could not materially deviate from it. The currencies of the chief capitalist countries, their gold content, and the relationship between their purchasing power were therefore more or less stable. For, as Marx wrote, "when money leaves the home sphere of circulation, it strips of the local garb which it there assumes, that of a standard of prices, of coin, of tokens, and of a symbol of value, and returns to its original form of bullion."

In the period of general crisis of capitalism, particularly in its present stage when there is a sharp aggravation of all capitalist contradictions the monopolist bourgeoisie can no longer ensure the stability of its currencies. While in the period of free competition the currencies of such countries as Britain, France and the United States were more or less stable, later on, with the intensification of the unequal economic and political development of the capitalist countries, in order to hold their positions in the competitive struggle they were compelled to institute many currency restrictions and discontinue the exchange of their currencies for gold. Gold circulation was replaced by paper money circulation, which under capitalism is inseparable from inflation and depreciation of currencies.

Today, with banknotes no longer freely exchangeable for gold, the purchasing power of the currencies of capitalist countries departs from their nominal gold content (to a different degree for different currencies). At the present stage it is no longer the gold content which determines their purchasing power, but the other way round: the actual purchasing power of the currencies which developed under the influence of various factors, in the final analysis, determines their nominal gold content. Of course, this does not mean a complete break between the currencies of the capitalist countries and gold. Even in the conditions of the general crisis of capitalism these currencies can perform their functions only insofar as they represent gold.

A certain conformity between the purchasing power and the nominal gold content of the currencies of capitalist countries is achieved only by the devaluation of currencies. Devaluation, moreover, becomes a law of money circulation. Capitalist states are forced to resort to it more and more often, thereby reducing the gold content of their currencies and taking into account their reduced purchasing power. To illustrate, the US dollar was devalued in 1934 when its gold content was cut 41%. The gold content of the British pound sterling has been reduced by 66% since 1931, following several devaluations. The French franc underwent the steepest depreciation, its gold content going down from 0.290323 grams in 1913 to 0.0018 grams by the end of 1958, or to 1/160th of its former value. Since the end of World War II the French franc was devalued five times. Although in 1959 the depreciated francs were called in and exchanged for new francs (one new franc for 100 old), the gold content of the franc is only 62% of the 1913 parity.

It is important to note, too, that each reduction of the gold content of the currencies of capitalist countries as a result of devaluation ordinarily does not correspond to their real depreciation. For instance, in the United States wholesale prices have gone up 99% since 1913, while the official price of gold has increased only 69%. In Britain wholesale prices have increased more than fourfold, but the official price of gold has risen 194%. In France wholesale prices have increased 220 times, while the official price of gold — roughly 160 times. As a result, in 1959 the purchasing power of gold in the United States was down 37% compared with 1913, in Britain — 30%, and in France — 27%. The same tendency may be observed in the other capitalist countries.

The depreciation of gold with respect to goods does not rest on changes in its relative value. Between 1913 and 1959 labor productivity in United

States industry, which accounts for something like half of the industrial output of the capitalist countries, has almost doubled. During the same period the gold output per worker employed in the gold mining industry of the Union of South Africa (which accounts for roughly two-thirds of the total gold output of the capitalist countries) increased by approximately 30%. Thus, in the last 46 years the value of commodities has declined by more than the value of gold, and hence the relative value of gold has increased.

Nevertheless, the United States has artificially kept the official price of gold at \$35 an ounce, a price established way back in 1934. The difference between this price and that which would correspond to the actual value of gold is, in a way, tribute paid to the United States by gold selling countries for many years. Making use of its position in world trade, the United States has been buying gold at a low price for a long time. Deliberately creating a dollar famine in Western European countries, it greatly increased its gold reserve — from \$10 billion in 1935 to \$23.3 billion in 1952. This made up some two-thirds of the world's gold reserve in capitalist countries.

In recent years, however, due to a deficit in its balance of payments, the United States itself has been compelled to sell gold at this comparatively low price. Between 1952 and 1960 it sold some 5,000 tons of gold, as a result of which its gold reserve dropped to 44% of the total gold reserves of the capitalist countries. This, naturally, has sapped the foreign exchange reserves of American imperialism and may force the United States to raise the official price of gold.

Under these conditions the rate of exchange of the ruble with respect to the US dollar could not be fixed otherwise than on the basis of the actual relationship between the purchasing power of the two currencies.

It is not difficult to foresee that because of the high rate of growth of the productivity of social labor and national income in the USSR, the purchasing power of the ruble will steadily increase while that of the currencies of the capitalist countries will decline in consequence of their depreciation through inflation. In this connection, the gold content of the ruble and its rate of exchange with respect to the currencies of the capitalist countries will increase from time to time in the future as well. The Soviet government has instructed the State Bank of the USSR, in the event of a change in the gold content of currencies of the capitalist countries and in their exchange rates, to fix the rate of exchange of the ruble by taking these changes into account. Of course, these changes will not affect prices on

the home market or the money income of the population.

The new exchange rate of the ruble will help to improve the economic operations of Soviet foreign trade and other economic organizations. At the new exchange rate of the ruble the prices of commodities and the official price of gold on the capitalist world market will be more in accord with the average level of wholesale prices and the official price of gold in the Soviet Union. This will produce the conditions for gauging the gold value of goods made in the Soviet Union directly by means of the ruble as a measure of the average relative value of gold in the world. Our economic executives have been given the possibility of studying world market prices more thoroughly and comparing Soviet wholesale prices with them more accurately. This will help them to better determine which commodities cost the Soviet economy relatively little and which are relatively expensive, and thus to take into account more fully the requirements of the law of value in fulfilling the targets of the Seven-Year Plan.

The new exchange rate of the ruble with respect to the currencies of the capitalist countries will help to further strengthen cost accounting in the foreign trade organizations, establishments of the Ministry of Merchant Marine engaged in the transportation of exports and imports, and in all other organizations conducting the Soviet Union's foreign economic relations. The new rate will make it possible to take fuller account of the comparative profitability of the export and import of different commodities and the profitability of the rational economy of the USSR's trade with individual countries.

The new exchange rate also creates the possibility of making retail prices in capitalist countries commensurable with average retail prices in the Soviet Union. This has eliminated exchange of currencies of capitalist countries which have been applied since April 1957 in non-commercial payments and in exchanging the currencies of these countries for rubles. All settlements with capitalist countries in both foreign trade and non-commercial payments, including also settlements with tourists from these countries, will now be made according to a single official rate of exchange.

The new exchange rate has created the conditions for further promoting and extending economic relations with the socialist countries. The new rate will permit the preparation of joint measures for further improving the whole system of settlements among these countries with due regard to their mutual interests.

The measures taken by the Communist Party and

the Soviet Government to further strengthen the ruble and the entire Soviet monetary system have produced a great impression on economic circles in the world and have been widely discussed by the press.

They have met warm support in the fraternal countries of the socialist camp. Ernst Kemmel, director of the Institute of Finance of Humboldt University in Berlin, said that "the raising of the gold content of the ruble testifies to the fact that the Soviet Union has taken an immense stride forward in its economic development. It shows the way for the development of the currencies of the whole socialist camp and attests to the steady progress in the purchasing power of these currencies." "The socialist world market," wrote the *Soviet newspaper Otechestven Front*, "now has the most stable currency in the world, which it will use as a basis for building and consolidating its currency relations."

Attempts have been made in the bourgeois press to interpret the strengthening of the exchange rate of the ruble and the rise in its gold content as a deviation of the ruble. But very soon most of the financial reviewers of the capitalist countries have had to admit that these statements were completely unfounded.

Furthermore, noting the growing purchasing power of the Soviet ruble and its rising prestige, many of them have expressed the fear that the Soviet Union is laying the foundation for making the ruble an international currency with a view to participating more actively in foreign trade. The French weekly *Carrefour* wrote: "Today all countries' currencies have become depreciated in comparison with Soviet currency, and consequently the USSR has proved to be in an exceptionally favorable situation at the very time it wishes to expand trade between the East and West." The Italian weekly *Punto*, following up this thought, said: "The measures taken by the Soviet government testify to the fact that in all probability the ruble will very soon become convertible. At this time the new relationship between the dollar and the ruble will bring prices in the ruble zone in line with prices in the world market, and this is one of the most obvious signs that the USSR intends to make the new ruble an international monetary unit so as to compete with the dollar, pound sterling and German mark. There is no doubt whatever, that with its gold reserves essentially unlimited, the USSR could guarantee the gold basis of the new ruble."

In the opinion of Sidney Hemple, financial reviewer for Reuters, the most important aspect of the currency reform in the Soviet Union is its objective, namely, to build the Soviet Union's

international trade "on the basis of taking account of prices and costs." Noting the recent measures taken by the Soviet Union in this direction, Hemple comes to the conclusion that they are "the most far-reaching and potentially most important steps in the economic history of the Soviet Union."

The higher gold content and exchange rate of the ruble do not impinge on the material interests of other countries. Raising the exchange rate of the ruble with respect to the currencies of capitalist countries reduces foreign trade prices expressed in rubles. This has made it necessary to revise all prices computed in rubles on the basis of foreign market prices, namely, credits, clearing account balances and certain other mutual payments. However, neither side will lose or gain anything as a result of the revision.

The new measures taken by the Soviet Government for the purpose of further strengthening the Soviet monetary system and enhancing the role of the ruble in international settlements are the result of the vast achievements in the economic development of the Soviet Union under the leadership of the Communist Party and its Leninist Central Committee headed by Nikita Khrushchev, and are proof of the indisputable advantages of the socialist economic system.

The Soviet people are proud of the fact that they have created the soundest currency in the world. Its international prestige and the part it plays in ensuring the stability of transactions between countries will continue to rise steadily.

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ALLAKHVERDIAN:

The Functions of the Financial System Under Socialism

With the full-scale building of communism involved planning in the distribution of the national income is accompanied by a greater role for the financial system in ensuring expanded socialist reproduction and in the creation of various social funds.

The growing importance of the financial system requires a more profound study of its content, functions and role in social reproduction. The further elaboration of these questions plays an important part in developing the theory of socialist finance as well as in the practice of communist construction. In this article we limit ourselves to discussing the questions relating to the functions of the socialist financial system at the present stage of development of our society.

In a socialist society every economic category, including finance, is consciously utilized and appears as an instrument of economic policy of the state and the government.

Under socialism the financial system comprises all money relations connected with the planned production, distribution and use of money incomes and accumulations. Socialist finance, as an economic category, expresses those economic relations which are called forth by the mobilization and use of

money income and accumulations resulting from the productive activity of socialist enterprises, and from the accumulation of money in the state's centralized fund and its utilization. Under socialism, when the national income is largely distributed in value form, the funds designed for social purposes appear in the form of state funds or decentralized funds of financial (money) resources. This means that the movement of the national income under socialism is implemented by means of financial relations.

Under socialism the movement of the social product in its entirety, from its starting point — production — to its final stage — consumption — is expressed in commodity-money relations and inevitably must be given a value form. In the higher stage, communism, when instead of two forms of socialist property there will be a single form, property of the whole people, when commodity production and its money economy will disappear and the law of value will cease to operate, there will no longer be any need to use value and its forms in the process of social reproduction. Under these conditions there will be no objective need to retain a financial system. When labor expended on the production of the social product will be measured not

indirectly, by means of value and its forms, but directly, by the amount of labor-time, then money, credit and finance will disappear. "People," as Engels wrote, "will be able to manage everything very simply, without the intervention of the much-vaunted 'value.'" (1) But we will get to that stage not by weakening but by strengthening in every way the commodity-money relations and all key value factors in the organization of production and distribution of material wealth.

For a correct understanding of the essence of Soviet finance and its functions the following points of departure should be taken into account: first, the existence of a financial system under socialism stems from the persistence of commodity production, the operation of the law of value and the objective need to utilize value and its forms, and primarily, money; second, finance is an economic category expressing certain social relations; third, the specific character of finance is that it expresses a system of relations connected with the formation and use of money incomes and accumulations, centralized and decentralized monetary funds; and fourth, socialist state finance cannot, by analogy with capitalism, be confined to the state budget, for it embraces the extensive financial system of socialist enterprises and organizations.

In order to describe the function of the financial system under socialism we must first establish what we mean by this concept. By the functions of the financial system is generally meant the manifestation of its essence and purpose in social reproduction. We can appraise its role by the objective results to which the realization (use) of its respective functions leads. This means that its role in social reproduction appears through the functions of the financial system.

In solving this question we must proceed from the proposition that the functions of finance have their own objective basis and cannot be derived from the economic policy of the socialist state. Otherwise, willy nilly, the financial system is endowed with "functions" that are not characteristic of it. Yet the purpose of every scientific analysis is to discover and understand the inner content of, and hence the characteristics inherent in, a particular economic category.

On the question of the functions of the Soviet financial system different views have been expressed in our economic literature, but in recent years three positions have stood out more or less distinctly.

One position has been expressed most consistently in the works of V. P. D'iachenko, in particular, in his article "Concerning the Essence and Functions of Soviet Finance." (2) The main point of this

position is as follows: The purpose of the financial system of the socialist state is to provide, by means of the distribution of a part of money incomes and accumulations, the financial requirements for the expansion of production and maintenance of state institutions and organizations in the non-productive field (social and cultural establishments and the measures taken by them, the country's defense, upkeep of the government apparatus and so on). All this is accomplished through the distributive function of the financial system. As an instrument for the distribution and redistribution of the national income, the financial system at the same time actively influences all aspects of social reproduction, in other words, the utilization of the resources to be distributed and redistributed and the conditions of their formation. In this case the financial system performs the function of control: it is used by the socialist state as an instrument for controlling the measure of labor and consumption.

The second position is set forth, in particular in the article by A. P. Gokieli entitled "Some Questions Concerning the Theory of Soviet Finance." In his view, endowing Soviet finance as a whole with a distributive function is unacceptable. The distributive function, which by its nature is indivisible, is replaced by two independent functions: 1) planned accumulation of financial means and 2) planned allocation and use of these means. Actually the essence of the distributive function is not changed thereby, since in the given instance it appears as though Gokieli "splits" the two sides of the single process of distribution into two independent functions, revealing the content of the function of distribution. This function is defined as a dual process: accumulation of funds and their allocation. As we know, on the one hand a part of the income of socialist enterprises and organizations accumulated through the state budget, and on the other, this income is allocated to meet the needs of the national economy. Essentially, however, what we have here is a single process of distribution of a part of the national income. Thus, the distribution of money income and accumulations and the provision of resources for circulation in the economy are two sides of the single process of distribution of the national income.

What has been said here applies to all links of the socialist state's financial system, which by its nature is indivisible. We cannot therefore agree with the view that the finances of the different branches of the economy, in contrast to the finances of the state as a whole, have their special functions. Thus, A. M. Birman, in his article, "The Essence and Functions of the Finances of the Branches

the National Economy of the USSR" endows the finances of the branches of the economy, as distinct from the state (centralized) finances, with the additional function of providing means for the circulation of money in the economy. (4)

Some of our economists have endowed the finances of socialist enterprises and branches of the economy with the additional function of what is called the "purposeful and economical expenditure of monetary funds." (5) Actually, however, what is referred to here is not the function of finance but the principles underlying the spending of funds, which is ensured by the purposeful assignment of the resources to be distributed and the exercise of financial control over the production and financial activity of socialist enterprises and economic organizations. The distribution of funds is always linked with certain principles of organization of economic activity, with planning the utilization of the national income. The integral nature of the Soviet financial system confirms the unity of its functions.

The third position amounts to the recognition of a special productive function for the socialist financial system. It is consistently expressed, for instance, in A. M. Alexandrov's article, "Concerning the Essence and Functions of Finance in a Socialist Society." (6)

The national economic nature of the socialist financial system and the objective necessity of using it in the process of expanded socialist reproduction makes it an instrument of the state for stimulating the discovery and utilization of internal reserves. For the purpose of underscoring this aspect of the question and thereby showing the distinctive feature of socialist finance and how it differs fundamentally from capitalist finance, a special productive function is assigned to socialist finance, and the thesis is advanced that finance directly participates in the process of socialist production. However, for the financial system to perform a productive function, it must be an element of this production and participate in it.

The adherents of what is called the "productive" function of Soviet finance generally support their position by noting that finance aids in the circulation of funds intended for productive purposes and is employed to ensure expanded socialist reproduction. In proof of this they point out that the financial system serves the phases of circulation $M - C$ and $C - M'$, and since these two phases of circulation are a part of a single process of circulation of industrial funds, the financial system serves in each enterprise the circulation of funds as a whole, in other words, the whole production process. From this they draw the conclusion that a denial of the productive function of Soviet finance is tantamount

to a denial of the unity of the process of circulation.

The financial system of the socialist state is used to form fixed and working capital. This shows the direct connection between socialist finance and social reproduction. However, the circulation itself under the formula $M - C \dots P \dots C' - M'$ is realized by means of money. That is why in this case there is a merging of the functions of money and finance. We might just as well endow money with a productive function. However, as we know, in describing the functions of money, Marx did not find it necessary to derive a special, productive, function.

The Soviet financial system plays an active role in the process of expanded socialist reproduction. Proper organization of financial relations and financial planning, and the improvement of the forms and methods of organizing the financial system play an important role in ensuring the functioning of socialist production. But it by no means follows from this that finance performs a productive function. In our view, the recognition of such a function for finance stems from an underestimation of the role of distribution in the process of expanded reproduction. As we know, production relations encompass not merely the process of production directly, but also the relations arising among people on the basis of distribution. Everything that is advanced in favor of recognizing the so-called "productive" function of finance is contained in their distinctive function.

The methods of distribution appear, as pointed out by Marx, only as the reverse sides of the factors of production. (7) Distribution is not an isolated element but an essential factor in the functioning of the process of social reproduction. The distributive function of Soviet finance follows from the very principles of expanded socialist reproduction, from the objective necessity of planned distribution and redistribution of the national income in money form. Concretely, this means, first, that with the aid of the distributive function of finance the formation of the various social funds of accumulation and consumption is ensured, and second, the maintenance of planned proportions in the movement of material and money resources is established. Denial of the "productive" function of finance is not at all tantamount to a denial of the active role played by finance in the process of expanded socialist reproduction. Finance is an economic category of distribution and circulation, and that is why its role in the process of social reproduction appears to the extent to which distribution and exchange accompany the relations of production and consumption. Finance, however, is not an

element of material production and cannot take a direct part in the production process. Its influence on production is expressed indirectly in the relations of distribution and redistribution of money incomes and accumulations, and in the exercise of financial control over the process of their utilization.

The point therefore should be to properly reveal and demonstrate the active influence of the financial system on the process of production. There is no reason to think that in its function of distribution finance does not serve the circulation of funds in the national economy. Can anyone say that the distribution of incomes and accumulations through the state budget and their utilization for purposes of financing the national economy is not a process of serving the circulation of funds?

In economic literature we also find conflicting views on the supervisory function of finance. Some economists (A. P. Gokieli, M. S. Atlas, among others) hold that it is wrong to recognize this function, arguing that financial supervision does not show the essence and content of finance but its role in social reproduction. At the same time they raise the issue that financial control is not an expression of the function of finance but of the practical activity of the state and its respective institutions. In this case, in our opinion, the functions of the state are obviously confused with the functions of finance as an economic category. Actually, the respective financial bodies cannot employ finance as an instrument of accounting and control if the latter is not objectively conditioned by the very essence or content of the given economic category. Just as, for example, money cannot be employed in its function as a measure of value or means of circulation if the said functions are not inherent in it.

Since the essence and functions of the Soviet financial system are conditioned by the socialist mode of production and the economic relations inherent in them, it becomes possible to employ finance in its function of control over the use of material and money resources.

Consequently, the socialist system of economy itself makes it objectively necessary not only to distribute the national income, and on this basis to form various social funds, but also to use them most effectively and for specified purposes. It is the latter which gives Soviet finance its supervisory function.

With the aid of the financial system the socialist state exerts influence on the national economy not only through the allocation of money but also by means of financial control. At all stages of building socialism it used and continues to use finance as a major instrument of accounting and control over the

production, distribution and consumption of the social product and the national income.

The national income is the source of the socialist state's financial resources. However, the socialist state's financial potential depends not only on the total amount of the national income but also on the nature of its distribution and the efficient use of material and financial resources. This means that with the same amount of national income the socialist state can have different financial possibilities depending on the degree to which the national income has been properly distributed and on how effectively the financial resources have been used. Solution of these problems largely depends on how efficiently the financial system is used as an instrument for supervising the distribution and utilization of material and money resources.

The essence of an economic category is shown by the connections between it and other categories and phenomena. Accordingly, the functions of the Soviet financial system, too, must be examined by themselves, but in their operation and interconnection with the economic phenomena and processes in which they are found in practice.

The concrete manifestations of the functions of Soviet finance and the results achieved thereby change in accordance with the tasks being carried out at the particular stage of communist construction.

The need to ensure fulfillment of the Seven-Year Plan by providing material and money resources and their rational use requires the improvement of the Soviet financial system. The new demands made on finance as a result of our country's entry into the period of full-scale building of communism by no means signify the appearance of some new functions which had not been known before. It is a question of the more effective use in the future of the distributive and supervisory functions of Soviet finance. It is the task of finance not only to provide money for carrying out the program of economic and cultural development in the Seven-Year Plan period through planned distribution and redistribution of the national income, but also of stimulating in every way the rational and economical utilization of the funds.

Let us examine a concrete manifestation of the distributive and control functions of Soviet finance in present-day conditions.

In the present seven-year period, along with substantial quantitative growth of our country's financial resources due to the considerable increase in the total amount of the national income, important qualitative changes are taking place

the financial system. The role of finance in extended socialist reproduction and in the creation of the material and technical foundations of communism is rising. The revenue of the state budget of the USSR for the 1959-1965 period will approximately equal the revenue for the 13 years immediately following the war (1946-1958).

The total money accumulations of the socialist economy in the form of profits, turnover tax, social insurance funds, and the amounts added by collective farms to their indivisible funds, according to preliminary estimates should come to 1,200-1,250 billion rubles in 1965 compared to 660 billion rubles in 1959.

On the basis of the tremendous growth of money accumulations important changes have taken place in the way in which the functions of finance are realized, including the distributive function. The qualitative changes in the distributive function are reflected, among other things, in the fact that in recent years the redistribution of the income of the population plays a constantly decreasing role in the financial activity of the Soviet state, and the weight of this activity has been shifted to the distribution of accumulations and incomes of socialist enterprises. The growing money accumulations of the national economy will make it possible within the next few years, as N. S. Khrushchev said at the last Congress of the CPSU, to discontinue taxation of the population. But the role of the financial system in the distribution of personal incomes is being retained in view of the development of savings banks and state insurance. Implementation of the historic decisions of the Fifth Session of the Supreme Soviet of the USSR (May 1960) abolishing individual income taxes within the next few years will signify important qualitative changes in the distributive functions of the financial system.

To build up the material and technical foundation of communism requires capital construction on a vast scale. In this connection the financial system must ensure the timely and complete financing of the charted program of capital investments and simultaneously considerably heighten financial control in the sphere of capital construction.

An analysis of the respective data shows that the average annual capital investments under the Seven-Year Plan from centralized funds alone will exceed investments in 1940 by more than six times. However, the development of the distributive function of finance is conditioned not merely by the larger volume of capital investments; it is also conditioned by the fact that under the Seven-year Plan the structure of the distribution of capital investments in economic administrative areas and branches of the national economy is changing materially.

Material and financial resources must be concentrated on the decisive sectors of economic construction, those which play the most important part in building the material and technical foundation of communism.

Of the total of some two trillion rubles of capital to be invested from centralized state funds in the seven years, about one trillion rubles are to be invested in industry, of which some 700 billion in heavy industry. In line with the capital investments of 255.5 billion rubles for 1960 approved by the national economic plan, state outlays for financing them, taking into account the need for working capital in construction, equal to 261.9 billion rubles have been provided, of which 180.3 billion rubles are from budgetary revenues.

Under the present Seven-Year Plan the branch of heavy industry that will get the largest capital investments is the oil and gas industry (170 to 173 billion rubles); next comes power station construction (125 to 129 billion rubles); then the machine-building industry; and then the chemical industry, which is fourth in investment (some 105 billion rubles) and first in the rate of increase in capital construction.

While the total increase in capital investments in the national economy for 1960 is 11%, it is more than 30% in the chemical and machine-building industries, and more than 15% in the oil and gas industry. In a number of industries, particularly in manufacturing, the chief direction in financing capital investments will be the radical reconstruction, extension and technical re-equipment of existing plants. Experience has shown that capital investment in existing plants is much more effective than new construction; the former are recouped more than twice as rapidly.

The proper planning of capital investments makes possible the rational use of the accumulation fund built up from the national income. If material and financial resources are allocated to construction projects with prolonged building schedules the result is a growth of incompleting construction jobs and a delay in the commissioning of fixed assets. On January 1, 1959, the amount involved in unfinished construction jobs was 179 billion rubles.

The question of the most suitable distribution of social resources among industries and plants with different construction periods so as to use the accumulation fund most rationally and effectively is an important theoretical and practical one. Its proper solution by the national economic planning agencies is one of the main conditions for ensuring a high rate of socialist reproduction.

"On the basis of social production," Marx wrote, "it must be ascertained on what scale those

operations which withdraw labor and means of production for a long time without furnishing in return any useful product, can be carried on without injuring those lines of production which not only withdraw continually, or at certain intervals, labor power and means of production, but also supply means of subsistence and of production." (8)

This principle is reflected in the resolutions of the 21st Congress of the CPSU and of the June 1959 plenary meeting of the Party Central Committee, which pointed to the need for more efficient employment of the funds intended for capital investment.

The rational use of capital investments, in turn, is a reflection of the proper employment of the accumulation fund, which finds concrete expression in higher productivity of social labor.

In the present seven-year period the increase in production capacities put into operation will, as a rule, outstrip the rise in capital investments. This is an important qualitative index of higher effectiveness in the use of capital investments.

The task of the financial system is not merely to ensure the planned distribution of financial resources earmarked for capital investments, but also to strive for the timely commissioning of fixed assets and a reduction in the amount of unfinished construction.

In the current seven-year period important changes will take place in the structure of industry and in intra-industry proportions. The development of the industries which play a decisive role in creating the material and technical foundation of communism and which determine the rate of the country's economic progress will be stepped up, and the part of the national income which is intended to serve as an accumulation fund should be distributed accordingly through the financial system.

The Soviet financial system is also acquiring greater importance in the distribution of the social product of collective farms and in forming various collective farm funds on this basis. The total amount of capital to be invested in the development of agriculture will be roughly 500 billion rubles, of which 150 billion will be invested by the state. Collective farm finances are playing an increasingly greater role in capital investments; according to preliminary estimates collective farms will allocate close to 350 billion rubles for capital construction in the seven-year period. At the same time collective farms will receive more long-term credit; this amount will be 40 billion rubles during the seven years.

The distributive function of the financial system will be extensively used to provide funds to meet

the needs of the non-productive sphere by redistributing mainly the part of the national income which is intended to serve as the fund for individual and social consumption.

In his report to the 21st Congress of the CPSU Comrade Khrushchev revealed an important law of the distribution of the consumption fund, a law characteristic of the period of comprehensive construction of communism. He showed that the satisfaction of the material and cultural requirements of the members of the socialist society proceeds not only by means of increases in wages but also through the formation and use of various social funds, the role and importance of which will steadily grow as we advance toward communism. In describing this law Comrade Khrushchev said the following: "In our country there is a really communist way of raising the well-being of the people, creating better living conditions for all of society and for each individual member of it. This includes better housing, better public catering facilities, better public services, more child welfare establishments, an improved system of education, more recreation facilities, improved medical services, more cultural establishments, and so on."

This refers to outlays by the socialist state for financing public education, health services, social insurance and social security, building more children's institutions, sanatoriums, rest homes, homes for the aged, and so on.

The Seven-Year Plan provides for a 70% increase in outlays for social services, the total in 1965 from the state's budgetary funds alone to be approximately 360 billion rubles compared to 210 billion in 1958. More than one third of all state budgetary outlays will go for this purpose, and by the end of the Seven-Year Plan period outlays for social and cultural measures will rise to 4,600 rubles per worker per year.

In view of their economic content and ultimate purpose, the rapidly rising state allocations during the seven-year period for housing and municipal construction should also be classified among the social funds for satisfying the personal requirements of the people; earmarked for this purpose are 375 to 380 billion rubles from state outlays, or one fifth of the total capital investment by the state. This is 75 to 78% more than in the preceding seven years.

Considerable amounts of budget funds will be allocated for financing education. Outlays for the further improvement of health services and for construction and upkeep of preschool institutions in the seven-year period will come to more than 460 billion rubles.

In view of the fact that practically all industries

construction have been turned over to the jurisdiction of the Union Republics, a major task of the budget is to assure proper proportions in the distribution of financial resources among the all-Union departments and among the Union Republics. The distributive function of the Soviet financial system is also expressed in the fact that through the Union budget a part of the national income is redistributed among the Union Republics to ensure the most effective use of the material and money resources by properly combining the interests of individual Union Republics and the country at large. Concretely this is expressed in budgetary allocation.

In addition to the financial sources permanently assigned to the budgets of the Union Republics, they also receive allocations from the turnover tax and other all-Union revenues. To illustrate, for the purpose of its economic development the Kazakh Soviet Republic's budget will receive as revenue 100% of the republic's turnover tax, the Turkmen Soviet Republic — 99.8%, and the Tajik Soviet Republic — 99.1%, while the RSFSR's budget will get 24.7% of the republic's turnover tax. The Kazakh Republic will get an additional 5.09 billion rubles from the Union budget in 1960 for financing measures provided by the national economic plan. This, too, shows the distributive function of the Soviet financial system, which is expressed here in the state budget of the USSR.

In addition to a strengthening of the distributive function, in the Seven-Year Plan period there will also be a growth in the supervisory function of Soviet finance, the function of exercising financial control. Financial control should be directed to stopping the unplanned use of material and money resources, for this leads to the upsetting of planned balances in the national economy, causing considerable damage to society. What gives financial control its economic importance is that by means of it imbalances of unproductive use of funds are brought to light or prevented, and at the same time internal economic reserves are revealed. In view of this, it is the task of financial bodies to stimulate the rational management of the economy, the maximum reduction of costs of production and circulation, the discovery of economic reserves. Financial agencies must see to it that planned proportions between material and financial resources are not upset; each newly launched construction project must be assured material and financial resources for the whole period of construction. Of particular great importance today is the struggle against improper expenditure of wage funds and the violation of the ratios fixed by the plan between the increase in labor productivity and average wages.

Special attention should be given to combatting extravagance in the spending of funds.

In exercising financial control we must be guided by the appeal of the June 1959 Plenum of the Party Central Committee: "Economize on big and small things in every sector of production, raise production quality and cut costs. Remember that grams add up to tons, and kopeks and rubles add up to millions and billions."

All this demands that we strengthen the supervisory function of the Soviet financial system in the seven-year period.

The distributive and supervisory functions of finance are expressed in the Law on the Budgetary Rights of the USSR and the Union Republics passed by the Third Session of the Fifth Supreme Soviet of the USSR. Under this law the part of the national income allotted for financing the national economy, for raising the material and cultural standard of the people, for the country's defense and the maintenance of the organs of state power and organs of state administration are concentrated in the state budget of the USSR. At the same time the law emphasizes that in the process of preparing and fulfilling the state budget of the USSR, control is to be exercised over the financial and economic activity of enterprises and organizations.

The growing role of the financial system of the national economy in distributing and utilizing the national income demands increased economic activity by the financial bodies. In his report to the 21st Congress of the CPSU Comrade Khrushchev stressed that the "successful fulfillment of planned assignments urgently calls for a marked improvement in the work of all economic spheres." This injunction of Comrade Khrushchev directly applies to the work of financial and credit institutions.

In view of the reorganization of management in industry and construction, and the extension of the rights of the Union Republics and local government bodies, financial institutions are faced with new tasks. Local financial agencies now stand much closer to the sphere of material production, being directly connected with it. This is promoted by the decentralized system of transactions between enterprises and the state budget. In the period of comprehensive building of communism the direct link between the financial system and the economy will be even greater and its role in serving the process of expanded socialist reproduction will be heightened. All of which requires a considerable improvement in the economic work of the financial and credit institutions in mobilizing funds as well as in their distribution and utilization.

The utilization of the functions of the Soviet financial system in the economic activity of

financial and credit institutions is determined by the very content of their economic work. This encompasses: a) financial planning; b) analysis of the results of the economic and financial activity of socialist enterprises and organizations; c) financial control over the distribution and utilization of material and financial resources.

The new tasks confronting the financial system in the current seven-year period demand greater creative efforts on the part of the financial agencies. On the basis of a profound knowledge of the economy and a thorough study of economic processes, financial workers must become more deeply absorbed in economic activity and in analyzing the work of every enterprise and actively influencing it.

At the June 1959 Plenum of the Party Central Committee cases of excessive local patriotism were cited. They were expressed, among other things, in diverting financial resources earmarked for capital investment to meet secondary needs, arbitrary changes in retail prices, and breaches of a number of economic and financial obligations to the state.

Centralized finance must play an important role in halting these anti-state tendencies of excessive local patriotism. "In combatting such occurrences," Comrade Khrushchev said in his report to the Seventh Session of the Supreme Soviet of the USSR in May 1957, "in addition to applying means of political guidance, we must make full use of such powerful key factors at the state's disposal as integrated national economic planning, centralized finance and state statistics."

Application of the principle of democratic centralism in economic and, in particular, financial policy, besides opening up extensive possibilities for displaying creative initiative in the localities, at the same time presupposes maintaining the principle of centralism in the use of the financial system. Lenin said: "We must have financial centralization; we must concentrate our forces; without the application of these principles we shall not accomplish economic changes... I am for the broadest autonomy of the local Soviet organizations, but at

the same time I think that to make our efforts for the conscious transformation of our country fruitful we must have a single, strictly defined, financial policy and the fulfillment of instructions from top to bottom." (9)

Through the state budget, in a centralized way the socialist state carries out the planned distribution and redistribution of financial resources among the economic administrative areas and branches of the economy. This is a requisite for maintaining the planned proportions in the process of expanded socialist reproduction at the present stage.

The fulfillment of the important national economic tasks posed in the resolutions of the 21st Congress of the CPSU requires improvements in the economic work of the financial and credit agencies, and a greater role for the financial system in the rational distribution of funds and in their economical and purposeful use. In view of this, the distributive and supervisory functions of Soviet socialist finance must be further developed and its role in expanded socialist reproduction must be considerably raised.

Footnotes

(1) Friedrich Engels, Anti-Dühring, Gospolitizdat, 1953, pp. 293-294.

(2) See Voprosy teorii finansov, Gosfinizdat, 1957.

(3) See Trudy Tbilisskogo gosudarstvennogo universiteta, Vol. 65, 1957.

(4) See Voprosy teorii finansov, p. 133.

(5) Tezisy dokladov po voprosam sovetskikh finansov, 1959, p. 55.

(6) See Finansy SSSR, 1959, No. 7.

(7) Karl Marx and Friedrich Engels, Collected Works, 2nd Russian edition, Vol. 12, p. 721.

(8) Karl Marx, Capital, Vol. II, 1954, p. 356 (Russian edition).

(9) V. I. Lenin, Collected Works, Vol. 27, p. 348 (Russian edition).

COMMENTARIES ON WESTERN ECONOMIC THOUGHT

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OSADCHAIA:

Joan Robinson's The Accumulation of Capital

Joan Robinson ranks among the leading representatives of present-day bourgeois political economy in Great Britain. Taken as a whole her theoretical outlook can be summed up as "left Keynesian."

The problem of accumulation of capital, with which the book deals, is now attracting the attention of many bourgeois economists, and especially of Keynes' followers. As we know, having acknowledged that crises and unemployment under capitalism are not accidental, and holding that these vices can be "rectified" by a state regulated economy, Keynes confined his analysis to establishing the dependence of the volume of employment upon the level of national income. Taking the magnitude of capital and the techniques of production as constants, Keynes thereby abstracted from the influence exercised on employment by such a vital factor as the accumulation of capital. This is precisely the direction taken by Keynes' contemporary followers, including Joan Robinson, in their attempts to develop his theory.

Most bourgeois economists (Harrod, Domar and others) analyze the problem of accumulation independently of social-economic conditions. While examining production "in general," they operate with such general indexes as the rate of savings (or the share of accumulation in the national income), "productivity of capital," "the capital coefficient," and so on. And the final goal of these studies is not the discovery of the laws of the given mode of production but the creation of an "ideal" model of economic growth.

Robinson, on the other hand, tries to examine the problem of accumulation of capital under a capitalist mode of production from the point of view of the relations between wages and profits. In her book she formulates a system of expanded reproduction, seeking to reveal the determining factors in the "normal functioning" of social production based on

private ownership, and to demonstrate the possibility and feasibility of preserving capitalism, provided it is "organized."

Hence, in her objectives Robinson does not differ in any way from many other apologists of capitalism. However, notwithstanding this, the book has certain characteristic features which are of interest. Thus, the author is far more critical of the capitalist mode of production than other economists. This mode of production, she writes, is based on contradiction, for in her view the "divorce between work and property ... entails conflict" (p. 60). It is interesting to note that throughout her presentation of the problem of accumulation of capital she attempts to bring out the contradictions of capitalism. True, part of Robinson's thesis on the matter is far-fetched (as, for example, her examination of the reasons which allegedly give rise to cyclical developments), or is of a superficial nature. But at times she does discover the fundamental defects of capitalism, including the contradiction between production and consumption.

Unlike the majority of bourgeois economists Robinson champions the struggle of the working class for higher wages, but at the same time she asserts that this struggle corrects the fatal shortcomings of capitalism and helps to eliminate the contradictions between production and consumption. Hence the author calls on the capitalists to recognize the vital interests of the working class and to heed them. This distinguishes Robinson from other bourgeois scientists but, needless to say, her appeal to the bourgeoisie is of a utopian nature and in relation to the working class it is sheer opportunism.

The book considers accumulation of capital first in more abstract form, under conditions in which the entire profit is invested and there is an absence of crises, and then gradually a number of complicating circumstances are introduced which are characteristic of living reality (cyclical fluctuations, consumption out of profits, the influence of finance, trade, price movements, etc.). However,

London, Macmillan and Co. Ltd., 1956, XVI, 440

the fact should at once be stressed that the "abstract" method which the author applies does not really reach a point where it sheds light on the essence of the phenomena characterizing the capitalist mode of production. The categories she applies in her theoretical models are taken from the arsenal of vulgar bourgeois political economy, which largely explains the erroneous nature of many of the author's principled conclusions.

In Joan Robinson's conceptions there are absolutely no signs of such concepts as exploitation, value of labor power, surplus value, without which it is impossible to reveal the essence of the production relations of capitalism and to scientifically analyze the process of capitalist reproduction. Instead of surplus value she introduces the category of "income from property," defined as the "excess of the product over the wages bill" (p. 4). In Robinson's definition the capitalist as the embodiment of capital and the exploitation of the working class appears in the dual form of employer and rentier. The former, in her view, is quite a worthy figure who organizes production and receives "wages" for work done. The latter, that is, the rentier is the only one who enjoys unearned income (p. 8).

Wages, writes Robinson, constitute payment for work; their magnitude is the result of long-term historical development. True, Robinson defines the lower limit of the worker's wages as the physiological minimum ensuring existence and maintenance of the family. As for its present level in the developed capitalist countries, the author can find no economic laws to explain it.

Seeking to reveal the basic factors determining accumulation, Robinson builds up a two-sector model of social production. The first sector involves the production of investment goods, that is, the means of production; the second — the articles of consumption. In the market value of the product of each subdivision Robinson distinguishes the sum of wages (W_1 and W_2) and the quasi-rent ($Q_1 + Q_2$). The latter is a mixture of such different categories as depreciation and profits. Proceeding therefrom, the author depicts the relation between subdivisions I and II in the form of the following equation:

The value of the annual product of subdivision II is equal to $W_1 + W_2$, and $W_1 = Q_2$.

Inasmuch as such an equation presupposes the absence of consumption from profits, and the whole product of subdivision II is equal to $W_1 + W_2$, the incorporation of new labor in the process of production can only take place by reducing the real wages of those already employed. Robinson believes that such a decline is possible if wages exceed the physiologically necessary subsistence minimum, that is, there is, as she says, a "technical surplus" for

accumulation. "Suppose that, with existing techniques," she writes, "the output of commodities produced by the workers employed in the consumption sector exceeds a bare subsistence wage by only just enough to provide subsistence wages for the workers required to keep the existing stock of equipment in being (by replacements of items wearing out). Then ... there is no room for net investment and no accumulation can take place.

"Now consider a case in which real wages are comfortably above the subsistence level, so that there is a technical surplus available for accumulation, and in which the workers are not so strongly organized and so price-conscious as to set up an inflation barrier against a fall in real wages. Accumulation is possible" (p. 76).

It follows that reproduction on a large scale under fixed technical conditions, according to Robinson, must lead to a reduction of real wages. However technical progress allegedly produces a radical change in the situation. Increased labor productivity under free competition, which ensures a corresponding cut in the prices of consumer goods, is allegedly capable of paralyzing the tendency for real wages to decline, so that on the whole they must rise with increased per capita production. Moreover, the author attributes to competition the most important role in this process; it is competition "... which keeps prices in line with costs, and so raises the real-wage rate with productivity" (p. 92).

And so, capitalism of the free competition type, in the author's view, is bound to lead to higher wages for the workers in conformity with the rise in labor productivity. However Robinson understands that actually no such rise takes place. What, then, is the reason? The author sees it in the monopolies which, while seeking to raise prices to prevent their decline, slow down the rise in real wages. This, in her opinion is what gives rise to the so-called problem of "under consumption." The reduction of real wages curtails the demand for consumer goods, reduces production in subdivision II. The demand for reimbursement of fixed capital is reduced and this correspondingly also reduces production in subdivision I; unemployment appears, profits fall, etc. This, says Robinson, illustrates an essential paradox of capitalism. "Each employer individually gains from a low real wage in terms of his product, but all suffer from the low market for commodities which a low real-wage entails" (p. 78).

She considers the formation of monopolies the fundamental reason giving rise not only to the contradiction between production and consumption but also to a tendency to stagnation, that is, to a

ardation in the rate of economic growth. But Robinson thinks that this tendency can be prevented with the help of the trade union struggle of the working class. "The main defense against the tendency to stagnation comes from pressure by trade unions to raise money-wage rates ... If by this means real wages can be made to rise as fast as output per man the root of the trouble is cut, and the economy can accumulate capital and increase total product at the rate appropriate to the pace at which technical improvements are being introduced, just as though competition were still active" (p. 94). On the basis of this conclusion she works out an idyllic program for a society (a society founded on the principle of "let live and let live") in which "progressive" employers and trade unions can cooperate, for both, if it were, are equally interested in increasing real wages: the former because this creates a demand for goods, the latter because it improves the living standards of the workers.

This concept doubtlessly contains some positive elements insofar as it is anti-monopolistic in trend and defends the struggle of the working class for higher pay. In this respect Robinson's theory reflects the growing resistance of the democratic elements of society to the practices of the monopolies directed against the people. However, one can't help seeing in this outlook a direct attempt at an ideology for capitalism. The contradiction between production and consumption, generated, in Robinson's opinion, solely by the monopolies is actually organically inherent in the capitalist mode of production. The monopoly practice of raising prices, of course, does make this contradiction more acute. In this sense we agree with the author. But under capitalism it exists always: under both the conditions of free competition and of domination by the monopolies. It is the result of the fundamental contradictions of capitalism — between the social character of production and the private form of appropriation. Furthermore, the consumption of the working class under capitalism is not determined simply by the play of market forces, as Robinson expresses it, but by the value of labor power, and this provides very limited possibilities for the growth of the people's consumption under capitalism. Wages, as any other price, may deviate from value, may be above or below the latter, but they cannot break away from their value basis without menacing profits — the basic stimulus of capitalist production.

Trade union activity, that is, the economic struggle of the workers, unquestionably plays an important role in defending the living standards of working people against the encroachments of capital. However we should not overestimate the

significance of the economic struggle. With its help the workers can preserve or somewhat improve their living conditions, but it cannot eliminate the laws of capitalist production, the conditions of exploitation of the working class. In certain historical periods it is possible, in some countries, to somewhat alleviate the contradiction between production and consumption through the economic struggle, but it is impossible to liquidate this contradiction without destroying capitalism.

The idyll which Robinson paints with her program of cooperation between the workers and "progressive" industrialists is hopelessly divorced from the reality of capitalist society, its class contradictions, the fight of the working class for its vital rights. This idyll plays into the hands of the very same monopolists the author appears to oppose. It can only blunt the class consciousness of the workers, disarm them in the fight against capitalism.

Robinson then poses the question of the influence of acceleration or retardation in the rate of growth of population relative to the rate of accumulation of capital on the real wages of the working class. She draws a number of interesting conclusions concerning the relationship between money and real wages under the conditions of a "surplus" or "shortage" of labor. However Robinson does not analyze the way in which capitalism itself generates this "surplus" or "shortage." She simply skips the problem, depicting the growth of population as an independent variable which has nothing at all to do with capitalist reproduction.

Robinson deals at length with the problem of the influence of technical progress on the rate of accumulation of capital and on the relationship between wages and profits.

She considers that technical progress can be of three kinds: 1) Neutral — when the technical innovation simultaneously involves both subdivisions of social production; productivity of labor in these subdivisions grows equally and the relationship between the value of the means of production and consumption remains constant. 2) Capital-saving — when labor productivity in subdivision I grows at a faster rate and the value of the means of production in relation to the value of articles of consumption drops. 3) Capital-using — when labor productivity grows faster in subdivision II and the value of the means of production rises relative to the value of articles of consumption. All these concepts which Robinson introduces have some real sense when she examines the question of how technical progress influences the rate of accumulation of capital. Under conditions of capital-saving technical progress, which cheapens the means of

production, she notes that accumulation is accelerated, and on the other hand, under conditions of capital-using technical progress it is retarded. However, it should be borne in mind that the decisive influence on the rate of accumulation is exercised above all, not by technical progress, but by cyclical factors and certain general economic conditions in the development of individual countries.

Then Robinson makes a serious blunder in trying to link the form of technical progress with the movement of wages. She asserts that in two instances, under conditions of neutral and capital-saving technical progress, there allegedly occurs a rise in the wages of the working class. This assertion is a crude vulgarization of the real state of affairs and ignores the economic laws of capitalism. Wages are determined in the first place by the value of labor power. Robinson's arguments would have some sense only in the event that in the factors she cites there were certain reasons causing a deviation of wages from the value of labor power. With an acceleration of the rate of expanded reproduction the demand for labor may grow, in which case wages may indeed increase somewhat, and vice versa. We should always remember that the capitalist mode of production sets economic limits to the growth of production. But Robinson strives to abstract from these limits in her analysis, thereby divesting it of any serious scientific significance and adapting it, in fact, to an apologetic for capitalism.

Robinson concludes her investigation with a formulation of the ideal conditions for economic growth, which she calls the "golden age." The most important of these are as follows:

1. Neutral technical progress, under which output, wages and the value of capital per worker rise in equal proportion, while the rate of profit remains constant.
2. The flexibility and mobility of real wages, which increase with the growth of per capita output.
3. Free competition, which is an invariable and obligatory prerequisite for this mobility of wages.
4. A rate of growth of production which is approximately the same as the rate of growth of employment, plus the rate of growth of per capita output (all in percentages).

This ideal model contains a certain rational element: Robinson fully understands that production can only develop if consumption grows at the same time. Moreover, she realizes that this must be a balanced growth. But these conditions are impossible under capitalism. To a certain extent Robinson herself recognizes the fact when she writes: "It is only necessary to set out the conditions

required for stability to see how precarious the preservation of stability is under the capitalist rules of the game ... The conditions break down because: (1) the rate of technical progress alters unexpectedly; (2) the competitive mechanism becomes clogged; (3) accumulation tends to vary relatively to the rate of increase of productivity; (4) technical progress fails to be spread evenly throughout the system" (p. 89).

The conclusion, one would think, is not favorable to capitalism. But the former suffers from the same flaws which underlie the whole of Robinson's theory. Actually the author dwells on some isolated factors which generate deviations from stable growth under capitalism. Her analysis skirts the fundamental contradictions of capitalism, thereby making the criticism perfunctory and giving the positive program a reactionary-utopian character.

From an analysis of long-term tendencies Robinson switches to an analysis of the reasons for the cyclical development of capitalism. The cyclical form of capitalist reproduction arises out of the fundamental contradiction of capitalism — that between the social character of production and the private form of appropriation. However in Robinson's analysis the reasons for cyclical development lie only in general "economic instability" "uncertainty," as a result of which subdivisions I and II develop unevenly.

"For each individual entrepreneur the future is uncertain even when the economy as a whole is developing smoothly, and the actions of each entrepreneur affect the situation for the rest. For this reason there is an inherent instability, under the capitalist rules of the game, which generates fluctuations, so to say, from within the economy, quite apart from any change in external circumstances" (p. 209).

For the growth phase the decisive factor is an acceleration of the rate of accumulation of capital in the investment sector. The latter can take place, for example, through new technical discoveries. As a result the investment sector will begin to expand. There will be an increase in the number of workers employed therein and this will lead to a greater demand for consumer goods. There will arise a situation characterized by what Robinson calls a seller's market, that is, prices will begin to rise as a consequence of the excess of demand over supply. The higher prices will stimulate investments, generating thereby the cumulative process of increased production.

What can halt this accelerated rate of accumulation of capital? What stops the phase of expansion or "boom" as it is commonly called in bourgeois political economy? In Robinson's opinion the

the expansion phase, the disappearance of the seller's market and the rise of the buyer's market accompanied by a decline in production, can take place for three purely "natural" reasons. The first reason is as follows: The new investments in subdivision II, Robinson writes, will gradually be turned into new production capacities. Output of commodities will consequently increase. The gap between demand and supply will diminish. The driving force behind the further expansion of production will vanish.

The second reason allegedly stems from the shortage of certain kinds of raw materials and equipment essential for the further expansion of production. Time is required for new capital investments in the production of raw materials, for the construction of new plants and for increasing output. While all this takes place, the growth of production and employment in the investment sector is retarded. The seller's market disappears and a cumulative downward movement begins. Finally, the third factor which can halt the expansion in the investment sector, in Robinson's view, is the achievement of a maximum level of employment.

Proceeding from this "investigation," Robinson attempts to formulate the contradiction allegedly lying at the basis of economic expansions determining the alternating expansions and declines of production. "The essential character of the boom (as opposed to golden-age accumulation) is that it is based upon a contradiction. Investment goes on under the influence of the seller's market which investment itself creates. Over and over the investment due to whatever cause started the boom (say, an unforeseen invention), there is an extra investment due only to the high level of demand (relatively to capacity) induced by the investment. It would be possible for the seller's market to continue only if the rate of investment (and therefore demand for commodities) continued to expand from month to month in proportion to the increase in capacity that is taking place, and since the increase of the rate of investment cannot continue indefinitely while the rise in capacity goes on continuously as more and more equipment emerges in gestation, the seller's market cannot continue. Investment due to a seller's market is sawed off the bough that it is sitting on by bringing the seller's market to an end" (p. 201).

Robinson's analysis, in fact, diverts her from an investigation of the actual contradictions of capitalism. The rate of investment cannot remain constant for reasons more profound and significant than the obstacles Robinson speaks about. The weakening, to use her terminology, of the seller's

market does not at all result from the fact that the gap between demand and supply is gradually filled. Such an interpretation of phenomena characteristic of the peak of expansion stands everything on its head, distorts the real processes. Actually, with the growth of production there is a relative decline in demand on the part of the working people, that is, the rate of growth of demand in relation to the previous period and especially as compared with the rate of growth of subdivision I, diminishes. The relative independence of the development of subdivision I leads to a colossal over-accumulation of capital. This intensified gap between production and consumption cannot continue for long. With time the connection must be restored, which is what happens in the painful and ruinous form of crises.

Robinson also completely misrepresents the processes which develop during a crisis and which help to surmount it. She holds that the fall in prices during the crisis leads gradually to increased real wages. In her view there simultaneously occurs a certain increase in demand which, with time, prompts a growth in production. This picture which Robinson draws in no way corresponds to reality. As a rule the decline of prices during a crisis is accompanied not by a growth but by a decline of the real wages of the working class. The workers generally lose the gains they had won through stubborn struggle during the expansion phase. Many are thrown out of work. Others are forced to work a short week with a corresponding cut in their earnings. Capitalist production emerges from a crisis not because its mechanism ensures higher wages but precisely because it reduces them, thereby creating the conditions for a more intense exploitation of the working class and a rise in the profits of the capitalists. Wage cuts, along with renewal of capital, rationalization of production and the "washing away" of weak enterprises with backward technique are the main factors which help capitalism to emerge from a crisis and lay the foundation for a new production cycle.

In subsequent chapters Robinson examines the influence of other economic factors on accumulation of capital: the monetary-credit system, foreign trade, land rent. Robinson devotes a special chapter to an analysis of the question of the influence of consumption out of profits on the process of accumulation of capital. The analysis of all these problems is definitely of some interest. However, as Robinson herself writes, they do not seriously influence the development of the theoretical argumentation undertaken earlier.

It is usual for an author to end a book with conclusions. Robinson leaves this to the reader. "The reader must draw his conclusions for himself,"

she says (p. 386). Following this wise counsel we may say the following: Regardless of how earnestly a bourgeois economist wishes to analyze the capitalist mode of production he is never able to make a thorough scientific investigation of reproduction if he proceeds as a whole from the viewpoint of bourgeois political economy. Despite

her realism in evaluating certain important aspects of capitalism, in revealing certain relations of a technical and economic nature, Robinson does not provide a genuinely scientific analysis of the relations, contradictions and laws characteristic of capitalism.
